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AUTHOR Wickert, Rosie
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ABSTRACT

A survey of the literacy proficiency of 1,500 Australian adults indicates that: (1) people who demonstrate some proficiency with using printed material should not be classified as illiterate; (2) appropriate rating scales should be developed for assessing adults' literacy skills; (3) more detailed analysis of the characteristics of those who perform least well on each of the three literacy dimensions (document, prose, and quantitative) is needed; (4) short-term labor market programs will not be sufficient to compensate for the effect that years of disadvantage have had on levels of literacy proficiency; (5) there is an urgent need to upgrade numeracy skills in the context of literacy within restructured occupations; (6) literacy training that is integrated with job training should be adopted whenever possible; (7) employers should be encouraged to develop their workers' literacy skills; (8) the value of literacy should be promoted within the community; (9) all children should be assured of many literacy experiences; (10) there is value in writing official documents in plain English but that should not be confused with upgrading the literacy skills of adults; (11) critical thinking skill instruction should be integrated into literacy programs; (12) adult literacy programs should provide opportunities for adults to acquire broad knowledge; (13) school-based literacy may not be a good indicator of what constitutes adult literacy; (14) adult literacy objectives should include upgrading numeracy skills; (15) varied, flexible, and adequate literacy programs must be provided; and (16) raising literacy standards should be part of improving the life of all Australians, not just a way of putting the unemployed to work. (The document includes 15 tables, 14 figures, and 26 references.) (CML)

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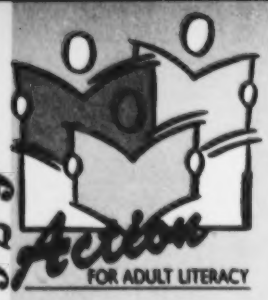

NO SINGLE MEASURE

A Survey of Australian Adult Literacy

by Rosie Wickert

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INSTITUTE OF TECHNICAL AND ADULT TEACHER EDUCATION

Sydney College of Advanced Education

No Single Measure

Rosie Wickert

*"There is no single measure or specific point on a scale that separates the 'literate' from 'illiterate'."**

SUMMARY REPORT

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List of Abbreviations

AACLAME – Australian Advisory Council on Languages and Multicultural Education

ALAC – Adult Literacy Action Campaign

APPEAL – Asia Pacific Program for Education for All

ESB – English Speaking Background

ETS – Education Testing Service *(United States of America)*

ITATE – Institute of Technical and Adult Teacher Education *(Sydney)*

NAEP – National Assessment of Educational Progress *(United States of America)*

NESB – Non-English Speaking Background

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Foreword

THERE HAVE RECENTLY BEEN AT LEAST THREE major changes in the way we talk about the literacy difficulties among the adult population. The first relates to the 'language of advocacy'. Until about three years ago those pressing public authorities to increase their commitment to tackling the persistent and unacceptably high levels of functional illiteracy among the adult population tended to 'name' the problem in an 'individualist - welfarist' way. The focus of discussions of adult literacy tended to be about the personal hardships endured by adults with literacy difficulties in our print saturated and print dependent society. Inevitably, perhaps, talking about the issue in this way leads to thinking about it as a marginal question of only peripheral interest to governments in their primary concern for the economy and the more pressing demands on them. Viewing the problem as a welfare one has tended to influence the way people planned programs to tackle the issue resulting in a dependence on volunteers and their dedication rather than systematic government policy.

Recently, much more attention has been paid to the economic costs to the nation of allowing significant numbers of adults to remain 'incommunicado' in the society's most powerful symbolic system for storing and conveying knowledge. Now literacy is named as a constraint to economic restructuring since it can inhibit labour mobility; since so many of those with literacy difficulties occupy jobs threatened with redundancy due to technological innovation and since so many of the new jobs created (e.g. in service industries, in handling information collection, storage and transfer) require highly developed mastery of written language. Talking about literacy this way, though it affects the same people in the same ways, has assisted in changing our perception. No longer is literacy of peripheral concern but it is now an important corollary of labour market programs, of economic restructuring, of the adaptability, mobility and more highly skilled type of workforce for the 'productive culture' which economic prescriptions of Australia argue is essential.

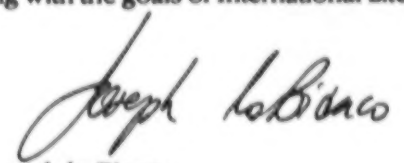
The second major change has been the 'felt need' for a more detailed and for that matter more sophisticated data base. Advocating that additional resources be devoted to literacy programs is hampered by the inadequate data base even more than it is by the previous ways of thinking about the problem. It is usual to cite the studies done in the mid – 1970s in metropolitan Sydney and extrapolations made from these studies to other states and to non-metropolitan areas. From such sources about 1,000,000 adult Australians are assumed to need assistance with literacy in English, with a significant minority being of English language backgrounds. Not only is it now possible to describe much better the level of need but also to be able to describe the nature of the need. We know now that 'the problem' is bigger than was thought, partly because the demands for literacy in the modern world are greater and, in themselves, increasingly more complex, but also because the social and economic costs to the nation now form part of the way we talk about the issue.

Thirdly it is clearer now just how 'context-dependent' literacy needs and measures are. We now take it for granted that literacy is relative to

the demands on individuals by their particular environments, their desires, aspirations and expectations, the social and cultural norms within which they live their lives as well as the broader social and economic environment which shapes their society. The importance of perceiving the literacy difficulties in this way is twofold: firstly it greatly assists policy makers and teachers to plan and design appropriate instruction for those seeking assistance and secondly it helps us to understand that in such a rapidly changing economic and technological situation as that which characterises the last decade of the twentieth century, simplistic demands for 'minimal' levels of skill in literacy are naive and that it is the rate of change that may be outstripping the literacy levels of the nation and that it is the rate of change that requires societal intervention to upgrade levels of adult literacy to meet its challenges.

No Single Measure is an important and timely document. The United Nations has designated 1990 the International Year of Literacy and has entrusted the carriage of the activities promoting universal literacy to its specialised agency, UNESCO. The issue is 'on the agenda' for all countries, developed and developing alike. *No Single Measure* admirably combines a proper and humanitarian concern for those who, for whatever reason, have failed to gain literacy skills adequate for their lives with the important need that the nation has to bring about the highest levels of skills, training and education among its workforce. It resists the temptation to 'score' the population by arbitrarily devising a cut-off point and declaring a great swathe of the population illiterate!, thereby contributing to their stigmatisation and to the unhelpful ideas of literacy as a fixed set of abilities which are mastered or failed in an absolute way – the purpose of *No Single Measure* is more honorable than to devise such meaningless measures. Rather it is a document written with a practitioner's good knowledge of what literacy is, how it is imparted and what now needs to be done. It is in these senses explorative, illuminative and diagnostic.

It might be difficult to measure and talk about literacy in simple ways but it is not difficult to measure and talk about our response – by any measure it is inadequate, small and tardy. Ms R. Wickert and her colleagues deserve commendation for this report and public authorities need now to be pressed into strong action to seriously tackle and alleviate the English literacy difficulties of the adult population in Australia in keeping with the goals of International Literacy Year.



Joseph lo Bianco
Chair, AACLAME
Chair, APPEAL, Australian Committee

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A STUDY OF THIS SIZE COULD NEVER HAPPEN without the contribution of many people. These range from expert colleagues in the field of adult literacy and educational research to those who helped produce, package and distribute the materials across the country.

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- to the staff at the Institute of Technical and Adult Teacher Education (ITATE), both in the office and on the academic staff, for their patience and support with the many demands made of them,
- to colleagues in the literacy field for their interest in and assistance with the development of the project and interpretation of the results,
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- to the members of the ITATE working party, who initiated this project: Laurie Field, John Hughes, Anne Leembruggen, Gabriel Lomas, Joy Phillips and Mark Tennant,
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- to the many organisations who provided materials for the authentic tasks used to measure literacy skills – Berger Paints, BIC Australia,Commonwealth Bank, the Communication Credit Union, the Commonwealth Employment Service, Grace Bros., the Hilton Hotel, John Fairfax and Sons, the NSW Department of Motor Transport, Sterling Pharmaceuticals and Telecom,
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I hope that all the many people who have been part of this project feel their efforts have been worthwhile and that they share with me the view that this survey should be just the beginning of our efforts to gain a much greater understanding of adult literacy in Australia.

Steering Committee

Dr Rod McDonald (Chair)
Director
Institute of Technical and Adult Teacher Education

Ms Jill Burton
Co-ordinator, Professional Development
National Centre for English Language Teaching and Research
Macquarie University

Mr Keith Foster
Head, School of Adult Education
Institute of Technical and Adult Teacher Education

Ms Marie Persson
Head, Division of Adult Basic Education
NSW Department of TAFE

Mr Noel Simpson
Executive Director
International Literacy Year Secretariat
Department of Employment, Education and Training

Dr Anny Stuer
Director
National Languages Policy
Department of Employment, Education and Training

The following were members of the Steering Committee for part of the project:

Ms Jan Gough-Watson
TAFE Policy and Programs Branch
Department of Employment, Education and Training

Ms Jennifer Hammond
Lecturer, Professional Development
National Centre for English Language Teaching and Research
Macquarie University

Mr Gary Hilton
Director
TAFE Recurrent Programs
Policy and Program Branch
Department of Employment, Education and Training

Recommendations

'The garbage I saw on television recently where businessmen were demanding that 16-year-olds spell the word mortgage, is just a totally spurious argument based on the self-interest of the business community, not the education of children. The education system should be based upon churning out thinking human beings not employment fodder for the business community.'

George Negus.[1]

1 Terminology

People who demonstrate at least some proficiency with using printed material should not be classified as illiterate although it should be acknowledged that they have severe literacy problems.

2 Rating Scales

There is a need to develop appropriate rating scales for assessing an adult's literacy skills. What is needed is an approach that explicitly provides a means for understanding the various types and levels of literacy proficiency reached and required in our society. The literacy dimensions described in this study could provide a useful lead in this respect as they allow for assessment items to be developed at all levels which are relevant to different situations and circumstances.

3 More Analysis

More detailed analysis of the characteristics of those who performed least well on each of the three literacy dimensions is needed in order to gain a greater understanding of what action needs to be taken to improve Australia's literacy levels.

4 Labour Market Programs

Short-term labour market programs will not be sufficient to compensate for the effect that years of disadvantage have had on levels of literacy proficiency. In fact, many of the long-term unemployed or low-skilled may not have the literacy abilities to cope with such job training programs since it is known that the literacy demands of the training often outstrip the literacy demands of the job being trained for. Proper evaluation of current labour market programs must be undertaken to evaluate the impact they are having on raising the levels of literacy proficiency of the groups they are targeting.

5 Literacy Audits

Proposals concerned with the restructuring of Australian industry make assumptions about the ability of the Australian work force to cope with increased demands on their literacy and numeracy abilities. There is an urgent need to establish what these literacy and numeracy demands are likely to be within particular occupations and an urgent need to upgrade workers' literacy and numeracy skills accordingly.

6 Integrated Training

Research has shown that the literacy abilities of workers increase faster if the literacy training is integrated with the job training.[2] This approach should be adopted wherever possible in workplace training programs even if it means longer training programs.

7 Employers' Involvement

Research has shown that employers benefit from a more literate workforce.[3] Employers, private and public, must be encouraged to take measures to develop the literacy skills of their employees.

8 Literacy and the Community

There is a need to promote the value of literacy within the community. All government departments with face-to-face contact with the public, Education, Community and Welfare Services,

Employment etc. should develop a co-ordinated strategy with the active support of non-government organisations in the field.

9 Early Experiences

Action must be taken to ensure that all children have many and varied literacy experiences. More effort must be made to inform all government agencies that have contact with children and their parents, of the significance of early contact with reading.

10 Plain English

There is value in writing official documents in Plain English. However this should not be confused with the issue of upgrading the literacy skills of Australian adults.

11 Critical Thinking

Adults must possess the skills of critical thinking to be able to make full use of their literacy abilities. Critical thinking skills must be seen as integral to acquiring literacy and be incorporated across the curriculum.

12 Knowledge of the World

Adults are unable to make use of their skills without a substantial background knowledge of the world in which they live. Having the opportunity to acquire this knowledge should be integral to the school curriculum. All adult literacy programs should also provide such opportunities.

13 Appropriate Assessment

The greater proficiency of the document dimension adds weight to the view that school–based attainment scores, or those based on prose comprehension, may not be good indicators of job literacy requirements. A review of current school–based assessment procedures should be carried out following greater analysis of what literacy skills are required as an adult.

14 Literacy Includes Numeracy

The definition of adult literacy adopted by the Australian Council for Adult Literacy incorporates numeracy. The quantitative dimension of literacy closely approaches what many think of as adult numeracy. It is clear from the results that when people have poor literacy skills, they have even worse numeracy skills. The need to upgrade numeracy skills in the context of literacy must be taken account of in all decisions to raise the levels of adult literacy in Australia.

15 Appropriate Provision

The government needs to prepare plans to tackle the widespread problem of literacy difficulties among adults. Varied, flexible and adequate provision for adults needing to improve their literacy skills must be widely available so that the opportunities for accessing provision are optimised.

16 Non English-Speaking Born

Opportunities must be made available for older adults, particularly older people for whom English is not their first language, to improve and maintain their literacy abilities in English. Raising literacy standards must not only be seen as imperative for upgrading the workforce but also for improving the quality of life for all adult Australians.

---

[1] *Sydney Morning Herald.* 2.8.1987

[2] Sticht, T. 1980

[3] Miltenyi, G. 1989

1. Background

'When there is a famine of proper evidence, not only is there much begging of questions, but the beggars, in fact, become choosers - and selective ones at that.'

S. Doenau[1]

IN APRIL 1987, THE PRIME MINISTER ANNOUNCED the government's endorsement of the National Policy on Languages. The Policy was released in the Senate in May and in June Cabinet voted a budget towards the initial phases of implementation of the Policy. Further endorsements and financial commitments followed. According to the author of the Policy, Joseph lo Bianco, 'In every one of these endorsements prominence was given to the issue of adult literacy and the government's acceptance of the recommendation in the National Policy on Languages for an Adult Literacy Action Campaign'.[2] Funding was provided for a two–year campaign; $1.96m for 1987/88 and for 1988/89.

One of the features of the Adult Literacy Action Campaign (ALAC) was to 'generate a much more accurate and a richer knowledge of the issue', including a 'detailed co–ordinated national level collection of both quantitative and qualitative information'.[3] As Joseph lo Bianco states in the Foreword to this report, it is not possible to persuade government of the urgency of the problem of alleviating the difficulties that many Australian adults have with literacy and numeracy without the facts to back this up.

The two years' funding that the government committed to the ALAC has now come to an end. This survey is one of a number of national research projects funded under this program, all of which will greatly increase our understanding of the issue of adult literacy. It seems ironic indeed that just as we are beginning to gain this greater understanding and are able to target funds more effectively, the funding is to be stopped. The fact that this coincides with the International Year of Literacy, which is intended to make an impact on literacy in Australia through a greater national effort, is only to be wondered at. The evaluation of the Adult Literacy Action Campaign, now under way, will, we hope, provide the evidence to show that injections of funds such as those provided by the ALAC are extremely effective, but that, as Arnove and Graff have shown in their analysis of a number of national literacy campaigns, two years is not long enough for lasting benefits and real change.[4]

What follows in this report are the first results of the first national survey of adult literacy in English in Australia. This is a summary report and more details of the data and the analysis are available in the full report. A great deal of data were collected, far more than could be analysed in detail at this stage. Further analysis, especially about particular sub–groups in the sample population will be reported over the next year or so.

In a sense, this report highlights major aspects of the findings as they relate to the original aims of the study which were to:

- identify the incidence of literacy difficulties in English in the adult Australian population
- identify the nature of these literacy difficulties
- explore socio–cultural factors that may be associated with literacy problems in the adult population
- identify the most pressing needs in terms of educational policies and provision in order that priorities can be set for the future directions of adult literacy programs in Australia
- produce a research design which can be extended and replicated to provide the opportu-

nity for developing an increasingly comprehensive picture of literacy in English among the adult Australian population.

The fieldwork, coding, data entry and initial analysis were carried out by AGB McNair in close consultation with the researcher. The responsibility for the choice of research design, the methodology and the interpretation of the results rests entirely with the researcher.

---

[1] Doenau, S. 1982

[2] Lo Bianco, J. 1987

[3] ibid.

[4] Arnove, R.F. & Graff, H.J. 1987

2. Approach

'Literacy rates are seen as indicators of the health of the society and as a barometer of the social climate. As a result, illiteracy takes on a symbolic significance, reflecting any disappointment, not only with the workings of the education system, but with the society itself.'

Jenny Cook-Gumperz[1]

INTRODUCTION

WHAT IS THE STATE OF ADULT LITERACY IN AUSTRALIA? A clear picture of levels of literacy in the adult Australian population is urgently needed to inform debate about the educational policies and programs necessary to face the challenges of technological and economic developments in Australia. This summary[2] report presents the first results of the first national survey of adult literacy in English to be undertaken in Australia.[3]

This report presents findings about the literacy proficiencies of a sample of 1500 adults aged 18 and over across all states and the ACT not living in institutions at the time of the survey.[4] This chapter describes the concept of literacy adopted for the study and shows how it was adapted from a significant American study which devised mechanisms to measure literacy proficiency on three separate but related dimensions. The framework for the model is explained along with suggestions for future research to further test the potential of the approach outlined.

A more detailed description of the tasks and how they were developed then follows with the main findings in terms of the three dimensions - document literacy, prose literacy and quantitative literacy. These results are presented according to the proportions of the sample population able to perform tasks at varying levels of difficulty on each dimension. The effect of three background characteristics: age, level of education and age learned to speak English are considered.

The next four chapters look at the relationship between literacy proficiency and a range of background characteristics and behaviours. The first presents the results of a regression analysis which attempted to discover which variables accounted for differences in literacy performance. This analysis was set up to see if an answer could be found to the question about whether it is possible to identify which background factors might enable us to predict what circumstances result in literacy problems as adults. This is followed by an examination of the differences in performance between those for whom English is not their first language and the English-speaking born. The next chapter presents various findings which have implications for the workplace, including those relating to metropolitan/non-metropolitan samples, and the last chapter examines the effect that literacy practices, either as a child or as an adult may have on current literacy proficiency. Each section contains a summary of the relevant findings and the whole report ends with some major conclusions. Recommendations for action are presented at the front of the report.

DEFINING LITERACY

'The first problem to be met in counting illiterates is to define what is meant by illiteracy. As a matter of fact, literacy is a characteristic acquired by individuals in varying degrees from just above none to an indeterminate upper level. Some individuals are more literate than others; but it is really not

possible to speak of literate and illiterate persons as two distinct categories. Nor is the problem solved by introducing a third category, semi-literates, placed between the literates and the illiterates.'[5]

The research design is based on that developed by the Educational Testing Service of the United States for the recent survey 'Literacy: Profiles of Young Adults.'[6] That study was used as the basis for this work because it made a serious attempt to devise a way of measuring literacy that acknowledged that not only is literacy a relative ability, it also has many dimensions. It will be referred to as 'NAEP Young Adult' in this report.

Literacy is not a clearly definable positive/negative accomplishment. It is a set of skills that people have to varying degrees. Their ability to use these skills may vary from one context to another. The notion of a minimum standard is relative, which is why the debate about standards of literacy will always be controversial. It is relative to social and cultural norms, to time and place, to purpose and intent. Even the extent to which universal literacy is seen as desirable can be traced to historical incidents.[7]

The concept of literacy adopted for this study views literacy as the application of specific skills for specific purposes in specific contexts, not as an isolated set of technical reading and writing skills.

In the study, literacy is defined as:

'using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential.'

Different ways of using printed and written information were identified and a large number of simulation tasks were developed to assess performance in these different ways. The tasks chosen for the survey were categorised according to one of three types of literacy proficiency – document literacy, prose literacy and quantitative literacy. The significance of this approach is that it opens the way to devising appropriate and relevant ways of assessing the literacy proficiency of adults. The approach recognises that there are many different types of literacy that adults use which will have been acquired (or not) in different ways and for differing purposes due to the complex matrix of personal background experiences. It also allows for the possibility of developing profiles not only of a person's literacy proficiencies but also of the literacy requirements of, say, particular occupations. And by using and analysing different kinds of literacy tasks at differing levels of complexity as the basis of assessment it allows for an assessment of the influence of a text construction itself as a contributory factor to literacy difficulty and does not assume that the 'problem' always resides with the individual. Above all it acknowledges that to 'function' in society is relative to individual needs and thus that different levels and types of literacy need to be identified, so that profiles of performance can be constructed on the basis of relevant and appropriate assessment tasks. It was not possible to explore all these possibilities in the study but they are included as important indicators for future research.

This is a major departure from most standardised tests of adult literacy which not only treat literacy as a fixed inventory of skills that can be defined and measured as a simple test, but which also often treat the population to be tested as a uniform group. The results of these tests then tend to be seen as being universally applicable to a wide range of contexts. In most such tests, literacy is treated as an ability along a single continuum with scores indicating the various amounts of the trait an individual possesses. A particularly disturbing aspect of these tests is that a single point in this single continuum is then selected below which people are classified as illiterate. Different tests pick different points, sometimes quite arbitrarily, and usually related to the purpose of the test, which may or may not be explicit. Wherever this point is placed, most tests still use the term illiterate to describe those below the point. Since literacy is relative to factors such as purpose, time, place, and personal judgement, the consequences of arbitrarily labelling large chunks of populations as illiterate is clearly

socially unjust and inaccurate. The distinction between a literate and an illiterate person sounds simple. It is not.

Instead of concentrating on illiteracy, we need to be talking about what the levels of literacy ability are in contemporary society. Because literacy is a social construct, conventionally–held assessments of a basic standard of literacy are related to time and purpose. By the standards of the early part of this century, whereby a person was said to be literate if he or she could sign their name, we do not have significant illiteracy in Australia. But such a measure is not appropriate to the literacy and numeracy demands of today. Adults are now required to bring different kinds of literacy and problem solving skills to different contexts and these vary in complexity.

What concept of literacy do adult literacy practitioners hold and how do they put this into practice in their teaching? Is the concept of literacy adopted by this study consistent with working definitions 'in the field'? One hundred and fifty practitioners – teachers, tutors, organisers – were randomly selected and asked a series of questions about this.

Sixty–five responded from all States and the ACT. The results supported the approach of this study. There was broad agreement on the relative nature of literacy. With very few exceptions, the respondents indicated that it is inappropriate or impossible to identify a standard upper or lower limit of literacy ability. Literacy ability was described by nearly all respondents in terms of purposeful tasks within a particular society, thus acknowledging the relevance of the social context in which literacy occurs. When asked how they put their concept of literacy into practice in their work, at least two thirds responded in terms of functional everyday reading and writing tasks rather than specific reading and writing skills: the purposes for reading and writing rather than the tools. A third included numeracy in their concept of literacy.

RESEARCH FRAMEWORK

The NAEP Young Adult study developed banks of simulation literacy tasks by designing a matrix which took the relationship between everyday tasks and the uses to which those tasks might be put as the organising principle. The responses to these tasks were subject to extensive analysis to test the notion that literacy abilities lie along a number of dimensions. Three main dimensions were identified:

- **Document literacy**: the ability to use and identify information located in documents such as forms and memos
- **Prose literacy**: the ability to read and interpret prose in newspaper articles and books
- **Quantitative literacy**: the ability to apply numerical operations to information contained in print material, such as menus.

Using Item Response Theory the items were then placed on scales of difficulty ranging from 0 to 500.[8] The advantage of this technique is that it enables us to get a picture of the profiles of the literacy performance of different sectors of the adult population, however ultimately its value depends on the conceptual design of the items themselves.

It was not the intention of this study to replicate the NAEP work but it was considered to be such a breakthrough in the measurement of adult literacy that a similar methodology for the field work and interpretation of the results was used. An assumption was made for the purposes of this study that a similar attempt to identify dimensions of literacy and place similar items along the scales would produce similar results. This was done in the belief that the validity of these assumptions would be established at a later stage if this survey is considered to be a useful way to respond to the challenge of measuring or assessing the literacy abilties of adults. This assumption should be kept in mind when looking at the results particularly as they relate to the three scales.

Apart from making the items relevant to the Australian context and using authentic items rather

than reproduced facsimiles, the simulation tasks were essentially the same in both studies. This allows for some international comparison. During the research we discovered that a Canadian organisation had used the same materials which led to the exciting prospect of a three–way comparison. However the analysis and interpretation of the Canadian material was such that it disregarded the very reason for the approach by introducing a cut–off point reached by a somewhat arbitrary process.[9] Thus reference will not be made to the Canadian results in this summary report. A few comparisons will be made with the NAEP Young Adult results but on the whole this report will concentrate on the findings of literacy proficiency in the adult Australian population.[10]

In addition to the simulation tasks a large amount of background information was collected from each respondent in order to try and find out what other characteristics might be related to literacy ability. Much more data were collected than could be analysed for this study. This was a deliberate decision as it was a rare opportunity. More information will gradually be sought from the data to assist in understanding this complex issue. In addition the study will be replicated in different contexts thus enabling us to get a bigger picture. It is pleasing to report that at the time of writing the materials have already been used to survey 250 prisoners in New South Wales and for an in–depth study of one small region of New South Wales.

As literacy is inextricably linked with home, school, work and social and cultural environments it was extremely important that this study collected a large amount of information about the past and current background experiences of the population sampled. A third of the interview time was devoted to questions covering such demographic characteristics as early language experiences, experiences at school, educational attainment, employment status, current and past literacy activities and experiences, and information about parents. This twenty–minute questionnaire was the first phase of the interview.

The second phase involved the measurement of 'core skills'. The choice of the three core items was based on the results of a pilot of 25 interviews. Respondents were asked to sign a Bankcard where it said 'Signature', circle the expiry date on a Learner's Permit and identify how much medicine to give to a child from instructions on a medicine packet. The purpose of the core was to identify individuals with such limited skills that to continue with the simulation tasks would be extremely frustrating and embarrassing for interviewer and interviewee alike. These core tasks were the only verbally administered tasks, the rest had written instructions. The third phase of the assessment was the measurement of literacy proficiency through a broad range of common literacy tasks of varying levels of difficulty.

DEVELOPING THE TASKS

The tasks were developed to reflect the theoretical approach to literacy developed by the study, namely that it is not just the task that is an indication of literacy, it is what the reader is expected to do with the task. Reading it is not enough; it is the successful resolution of the action demanded by the task that implies literacy. For example, successful performance on a literacy task may involve 'difficult information processing such as locating information on complex displays of print, holding information in the working memory while finding additional information, transforming these fragments of information into new knowledge and communicating the results of these complex activities.'[11] Clearly this is a long way from decoding print symbols.

The simulation tasks developed by the NAEP Young Adult represent a variety of the purposes people have for using printed materials and a variety of materials associated with these purposes. Examples of the **kinds of uses** people make of written material include:

- locating specific facts

- following instructions to make or repair something
- reading to extend knowledge about a specific subject
- reading for relaxation
- using printed information to compare points of view
- organising information to present to others.

The **variety of materials** for such varying purposes might include:

- signs and other directional material
- memos, notes, notices
- forms, bills, invoices, cheques
- advertisements
- timetables, schedules, schemata
- graphs, tables, charts
- prose.

More than 100 literacy tasks of varying levels of difficulty were developed for the NAEP Young Adult study. They were organised in blocks so that each respondent was asked questions relating to approximately 30 items. As a result of statistical procedures they were organised into three scales – document literacy, prose literacy and quantitative literacy. This study adopted 25 of the U.S. items in order to keep the interview and literacy assessment to one hour.

The choice of items for this study was the outcome of a number of factors including:

- the results of piloting the items. For example, this resulted in the deletion of the writing tasks because of the difficulty of finding agreement about what constitutes a correct answer
- discussions interstate about what should be included. This was partly a matter of eliminating items that would favour respondents in a particular state
- the need to have items representing various levels of difficulty on each of the three scales
- the relevance of the items to the Australian population. Items were adapted as appropriate without changing the nature of the task.

It was beyond the scope of this study to undertake the same statistical development as the NAEP Young Adult of placing the items on literacy scales based on the pattern of responses collected. Thus it has been assumed that by adopting the multi–dimensional model developed by the NAEP Young Adult, the Australian results can be interpreted in a similar way. The extent to which this assumption is valid is for future research to establish. However the similarity of the findings for the 21 – 25 age group between the two studies suggests that, at face value, it is a reasonable assumption.[12] It is for this reason that the study adopts the term 'dimension' rather than 'scale'.

INTERPRETING THE FINDINGS – TASKS

The data collected in this study enable us to estimate what proportion of the adult Australian population are able to perform literacy tasks at various levels of difficulty. The items are placed along three dimensions of literacy, referred to as the document dimension, the prose dimension and the quantitative literacy dimension. The position of the items on the dimensions is a function of the percentage of the sample that got that item correct.

Three limitations of using average percent correct should be pointed out to assist the reader to interpret the results. First, the resulting pattern or profile is entirely a function of the particular groups that happen to have been included in the assessment and of the particular sets of tasks aggregated onto each of the dimensions. Secondly, there is no common point of reference across the three dimensions. For this reason the results, for the most part, are presented as sets of three scores, one for each literacy dimension, rather than a total score. This can be remedied in future work by the application of Item Response Theory, which will enable a range of scales to be constructed whereby performance can be compared across groups and sub–groups independent of the particular tasks contributing to the scale.

A third point to be made about using averages to report results is that the average does not adequately characterise the distribution of scores. Increases in averages do not tell us in what part of the distribution, or in which sub–groups of the sample population the increases have taken place. Standard deviations are reported; these in some cases are very high indicating a wide spread of scores, particularly where the sub–groups are very small. However the averages for particular sub–groups can be compared with each other thus giving some indication of where the variation in scores might lie and laying the ground for further analysis.

Given the constraints described above, the use of average per cents correct yields interesting and consistent patterns of results and enables us to interpret differences between sub–groups. It also enables comparison with the average per cent correct results of the NAEP Young Adult survey and provides support for the assertion that the literacy items used in the two surveys appear to be measuring similar degrees of difficulty and to be in a similar order. Where differences in the results appear, it seems to be to do with differences in the design of items, such as the instructions for medicine dosages for a child on a common analgesic package and the design of the authentic form rather than a made–up one. This itself is an interesting finding and raises the important point that the design of an item, linguistically or artistically, may affect the ability of the reader to carry out what would seem to be a straightforward literacy task. In other words, the decision to use authentic items in this study rather than photocopies and mock–ups out of context has yielded some interesting differences in the findings. Concerns about altering forms in literacy surveys 'to ensure they measured reading ability and not the layout of the form' have been expressed elsewhere.[13]

One further point needs to be made about the presentation of the findings that relate to performance on the literacy **tasks**. The findings are presented in two different ways:

1 Those findings that relate to performance of the **whole** sample on specific literacy tasks are presented as a percentage of the sample who got the item correct.

2 Those findings which show the performance of particular sub–groups of the sample on specific items are presented as a percentage correct of those who **attempted the item**. This decision was made because it is unreasonable to assume that not attempting an item means that respondents would have got that item wrong if they had attempted it. Other writers[14] have commented that the accuracy of the results of literacy assessments may already be adversely affected by the unusual nature of the test conditions, test fatigue and lack of interest. To further depress scores by scoring non–attempted items as incorrect did not seem valid.

The reader will find a Table presenting a comparison of the two sets of results across all the items in the assessment in Appendix 2. The average difference between the percentage of people correct for the whole sample and the percentage correct of those who attempted the items was 10 per cent for the document dimension, 6.5 per cent for the prose dimension and 7 per cent for the quantitative dimension. The questions which accounted for the greatest difference were those that asked the respondent to enter information on a bank deposit slip. Without these three questions, which were all on the document scale, the average difference is 8 per cent. Thus it could be argued that, on average, up to 8 per cent fewer of the population would be correct on the items if they had been reported as a percentage of people correct of the whole sample.

INTERPRETING THE FINDINGS – TYPES OF LITERACY

Apart from the Table in Appendix 2, all the results about the items will be presented as relating to one of the three hypothesised **dimensions** of literacy. It would be incorrect to interpret the

findings as though they are part of a single trait or that there is a known order of difficulty across all items in the assessment. This is why they are not presented in such a way. This is not to say that there are not complex and interesting relationships between various items on each of the three dimensions, but there are no common points of reference at this stage.

The findings that relate to literacy performance as an aggregate score on the three dimensions are presented in a different way. On the literacy dimensions the average score for the population or sub–population is used. The score is calculated in terms of the numbers attempting items on each dimension. Thus the average score is:

$$\frac{\text{total number of items correct}}{\text{total number of items attempted}} \times 100$$

However the data do allow some interpretation about levels of performance within each of the three dimensions. The theoretical framework for the construction of items at increasing levels of difficulty means that the tasks can be ordered according to the criteria used for their construction. The results seem to support this ordering of items suggesting this is a useful way of identifying not only levels of difficulty in literacy tasks, but also the characteristics of what causes a task to become difficult.

Attempts have been made in many other literacy surveys to label such levels to try and make the findings accessible to a wider audience. However it is difficult if not impossible to find words that accurately describe points on a graded quantitative scale. One has only to try to describe points on a scale of cold to hot to see that the results are relative to personal judgements and feelings. As others have pointed out[15] the only way to really understand what the label or scale means is to look at the characteristics of the tasks at the different points on the scale.

Of the various attempts at labelling levels of performance in literacy, one that seems to hold some promise describes five categories: Advanced, Adept, Intermediate, Basic and Rudimentary. These categories correspond to points on a scale of reading proficiency developed by the Educational Testing Service in the U.S. and were used as the basis for anchoring[16] the scales in the NAEP Young Adult study referred to elsewhere. At the risk of being accused, like Humpty Dumpty, of using a word to mean 'just what I choose it to mean',[17] these terms will be used to describe categories of performance in this study. If this is deemed to be a useful approach, it is essential that further work is done to establish a statistical basis for such categorisation. The justification for using these categories for the presentation of results in this survey is entirely pragmatic. With minor changes, the items used in this literacy assessment are assumed to fall at similar levels on the three literacy scales as they do in the NAEP Young Adult study.

- **Advanced** – able to perform tasks at the 350 level or below
- **Adept** – able to perform tasks at the 300 level or below
- **Intermediate** – able to perform tasks at the 250 level or below
- **Basic** – able to perform tasks at the 200 level or below
- **Rudimentary** – able to perform tasks at the 150 level or below on a scale of 1 – 500.

The results that follow are estimated to be representative of the roughly 12.25 million adults aged 18 and over in Australia who were not residing in institutions at the time of the survey. About 1.2 per cent of the sample were judged to have such limited literacy skills that they were not asked to complete the simulation tasks. That is, they failed to get any of the three verbally administered core items correct. This figure of approximately 1 per cent with severe problems with literacy in English is consistent with findings from other studies.[18] About half of this 1.2 per cent were from non–English speaking backgrounds, half had been or are currently employed in farming or labouring occupations and two thirds were over the age of sixty. However

as there were only 18 people in this category, care should be taken about drawing conclusions about the population as a whole. Further detailed analysis of the characteristics of those who performed poorly in the survey is needed. Thirty–eight or 2.5 per cent of the sample got all items correct.

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[1] Cook–Gumperz, J. 1986. p.1

[2] Full report available from the author

[3] The only other serious attempt to measure adult literacy was a survey of 1000 adults in metropolitan Sydney carried out 15 years ago. Attempts have been made to estimate the extent of illiteracy in other states by extrapolating from the Sydney material but the results of such work can only suggest what the real national figure might be

[4] See Appendix 1 for sample design and characteristics

[5] Kirsch, I. and Jungeblut, A. 1986

[6] See for example, Graff, H.J. 1987

[7] I.R.T. is a statistical technique for analysing test results which yields information about the relative difficulty of the tasks for a particular population

[8] Literacy in Canada. 1987. The Creative Research Group – at the time of writing the Federal Canadian Government is undertaking development work using the approach adopted for this study

[9] See full report for more comparative data

[10] UNESCO. 1957. p.18

[11] Cliff, R., Moore, M., Owen, A. and Wilkinson, J. p.6

[12] See Full Report

[13] Kirsch & Guthrie. 1977. p.144

[14] e.g. Mikulecky. 1982. p.2 - 3

[15] Carroll. 1987. p.425

[16] Kirsch & Jungeblut. 1986b. Ch. III

[17] According to Carroll, 1987, p.424, the choice of level was somewhat arbitrary and defined by 'presentation of typical reading tasks that individuals can be expected to perform correctly at least 80 per cent of the time at that level'

[18] e.g. U.K. National Child Development Study; U.S. NAEP Young Adults

3. The State of Adult Literacy in English in Australia - Findings

THIS SECTION DESCRIBES THE CHARACTERISTICS of items on each of the three literacy dimensions and presents findings at different levels on each of the three literacy dimensions. In addition it shows how three factors: age, level of education and age at which a respondent from a non-English speaking background (NESB) started to learn to speak English relate to literacy performance.

DOCUMENT LITERACY

Document literacy refers to the knowledge and skills required to locate and use information contained in forms, timetables, maps, tables, invoices and such like. These items aim to measure proficiency on what is often called functional literacy. Although the document dimension aims to measure different skills from the prose scale, analysis of the tasks making up the two dimensions shows some overlap. An example would be the ability to locate and match information. The moderate correlation in performance (.46) between the prose and document dimensions suggests that other skills and strategies are also important.

There are 11 items on the document dimension plus the three core items making a total of 14. Factors influencing the difficulty of tasks are:

- the number of features or categories of information that the reader has to **identify** in the question and **match** to features in the document
- the degree to which the feature information given in the question **corresponds to** or **is closely identified** with the requested information in the document
- the number of categories of information in the document that can serve as **distractors** (or plausible right answers) increases
- the extent to which the information requested **corresponds to** the respondent's **personal background information**
- the information asked for in the question has **less obvious identity** with the information stated in the document
- the extent to which the respondent is **familiar with the procedure** requested by the document.

At the Rudimentary level, the respondents were asked to sign their name on a Bankcard. The interviewer was instructed to say, 'Here is a Bankcard. Sign your name where it says Signature.' Several characteristics combine to make this task easy. First, the individual is asked to provide personal background knowledge. Second, there is only one feature or category that must be matched – the individual's name to the line designated 'signature'. Third, there is only one blank space on the card where the individual may respond. The most demanding of the document tasks asks the reader to locate and match five pieces of information using a paint chart, on which there are many distractors.

TABLE 3.1 Document literacy ability at five levels.*

(Scale 0 – 500)

ADVANCED	
Paint chart – identify product	350
ADEPT	
Yellow Pages – heading	310
Yellow Pages – phone number	300
Paint chart B	290
Deposit Slip – cash amount	285
Pay – identify gross pay to date	257
Bill – write out cheque	255
INTERMEDIATE	
Map – identify street intersection	250
Deposit slip – cheque amount	240
Dosage instructions	225
Deposit slip – enter date	220
BASIC	
Job application form	200
Learner's permit – expiry date	160
RUDIMENTARY	
Bankcard – sign name	110

*position of item based on U.S. analysis

TABLE 3.2 Percentage of people correct of those who attempted items on the document dimension.

Item	Percentage correct
Paint chart – identify product for purpose	61
Job form – complete job history etc.	(68)
Bill – write cheque	68
Paint chart – identify use	74
Yellow Pages – heading	69
Pay slip – gross pay to date	84
Deposit – enter cash amount	86
Yellow Pages – phone	92
Map – intersection	97
Deposit – enter cheque	96
Dosage – amount for child	(54)
Deposit slip – enter date	99
Expiry date – circle date	97
Bankcard – sign name	98

The items chosen were estimated to measure document literacy ability at, approximately, the levels shown in tables 3.1 and 3.2 (left).

The responses suggest that if a scaling procedure was applied to these items, it would produce some variation from the U.S. study about where certain of the items appear on a scale. Two of these are circled. These differences may be explained by:

- the different age range of the two samples. The older sample may have had more experience with certain 'functional' skills, e.g. cheques and banking
- problems with the fieldwork, particularly with the job application form. Although it is possible that age or distrust of forms may also be a factor

Comparison of Dosage Instructions used in NAEP Young Adult Survey

For stuffed and running noses:

Dosage: Adults - 2 teaspoons every 4 hours: children over 6 years - 1 teaspoon every 4 hours.

Caution: Unless directed by a physician, do not exceed recommended dosage. If drowsiness occurs, do not drive or operate dangerous machinery. Individuals with high blood pressure, heart disease, diabetes, or thyroid disease should use only as directed by a physician.

Australian Adult Survey*

For the relief of pain and discomfort in rheumatic, muscular and neuralgic conditions, headache and colds and following dental procedures. Reduces fever.

DOSAGE: Adults: one to two tablets (maximum 8 tablets per day). **Children** (7-12 years): Half to one tablet (maximum 4 tablets per day). Take with water every 3 or 4 hours if necessary.

CAUTION: THIS PREPARATION IS FOR THE RELIEF OF MINOR AND TEMPORARY AILMENTS AND SHOULD BE USED STRICTLY AS DIRECTED. PROLONGED USE WITHOUT MEDICAL SUPERVISION COULD BE HARMFUL.

STORE BELOW 30° C

USE ONLY IF FOIL SEAL OVER TABLET IS INTACT

*Complete packet was used in survey

- cultural differences in response to certain items
- differences in the items themselves. For example, the effect of the difference in the design and layout of the dosage instructions on the analgesic packet may explain the variation in responses. It is possible that the additional information in brackets (see comparisons overleaf) acted as a distractor thus making the question more difficult. It is also possible that the scoring was more strict and that careless circling of too much information partly accounted for the poor result. However we should not leave out the possibility that slightly more than half of the Australian population might misinterpret dosage instructions on medicine labels.

In spite of these differences the data, at face value, appears to support the proposal that items characterised as 'document' can be classified according to difficulty using the criteria described above.

Performance on Document Literacy

One per cent of the sample were not successful in their attempt at any item on the document dimension. The ability to sign one's name is estimated to be at the Rudimentary level on the document dimension. According to the results, 98 per cent of those who attempted this task got it right. Analysis of the findings in different subgroups at this level show scores ranging from 91 per cent to 100 per cent. The variation in the scores may be explained by language difficulties and the fact that the scorer did not accept a printed name as a signature unless the respondent had also printed his or her name on the cheque – in a later question. It also may be a function of reluctance to put one's name to a document. For example, of those who came from a country with a non-Roman script, only 93 per cent got the item correct. Ninety-two per cent of those with six years or less of schooling were correct. An unexpected result was that only 90 per cent of those who started to learn to speak English between the ages of 15 and 24 got the item correct. This is inconsistent with their higher than average score on other items and suggests that there might have been some resistance to signing a name.

As the tasks become more complicated they involve the matching of more than one feature and the presence of distractors or more than one plausible answer. Tasks around the Intermediate level include finding a particular intersection on a map and locating and writing down the 'gross pay for year to date' from a pay slip. 'Gross pay' and 'year to date' are the two features to be matched. The appearance of the word 'gross' in three other places and the existence of other totals are distractors.

Sixteen per cent of those who attempted this task did not get it correct. However analysis of the responses across particular sub–groups show a wide range of scores at this mid–level of ability. Although the average for the population was 84 per cent, 91 per cent of those aged between 18 and 24 achieved at this level compared to only 72 per cent of those aged 55 and over. Forty–five per cent of those aged 55 and over who were NESB were not able to do this task. As with most other tasks, the age at which the respondent learnt to speak English seems to affect literacy performance. Eighty–eight per cent of those who started to learn by the time they were 4 were correct compared with only 60 per cent of those who learnt to speak English over the age of 25. However, there is the same dip in ability in the group who began to learn to speak English between the ages of 10 – 14. This may be due to characteristics of the sample and indicates the need for more work in this area of English literacy ability amongst those whose first language is not English.

The amount and level of education also has a significant effect on the results. Thirty–five per cent of those with six years or less of schooling did not achieve at this level. Ninety–two per cent of those with professional qualifications got this task correct.

The most complex item on this dimension

asked the reader to identify which type of a range of paints he or she would need to buy in order to do a particular job. The reader needed to match five features of information in order to give the correct response – preparation, new, galvanised iron, exterior, Berger paint. A lack of background knowledge in this area as well as limited knowledge of the procedure of using charts such as this one were also estimated to add to the level of difficulty of the task.

QUESTION (written): **Here is your fortnightly pay slip. What is your gross pay for the year to date?**

Intermediate/ Adept Level

- 84% of those who attempted were right
- 77% of the whole sample were right

CENTRALISED PAYROLL SYSTEM — PAY ADVICE

PAY THIS FORTNIGHT				SERIAL NO	DEPT	LOCATION
NORMAL PAY	ADJUSTMENTS *	OVERTIME	GROSS EARNINGS			
819.40			819.40	8580574	K	0

GROSS SALARY OR WAGE RATE	409.70

DEDUCTIONS THIS FORTNIGHT		
TAXATION	SUPER	MISC
204.00		

YEAR TO DATE TOTALS				FORTNIGHT ENDED	NET PAY
GROSS EARNINGS	OVERTIME	TAXATION	SUPER		
2570.22		611.92		7/ 8/86	615.40

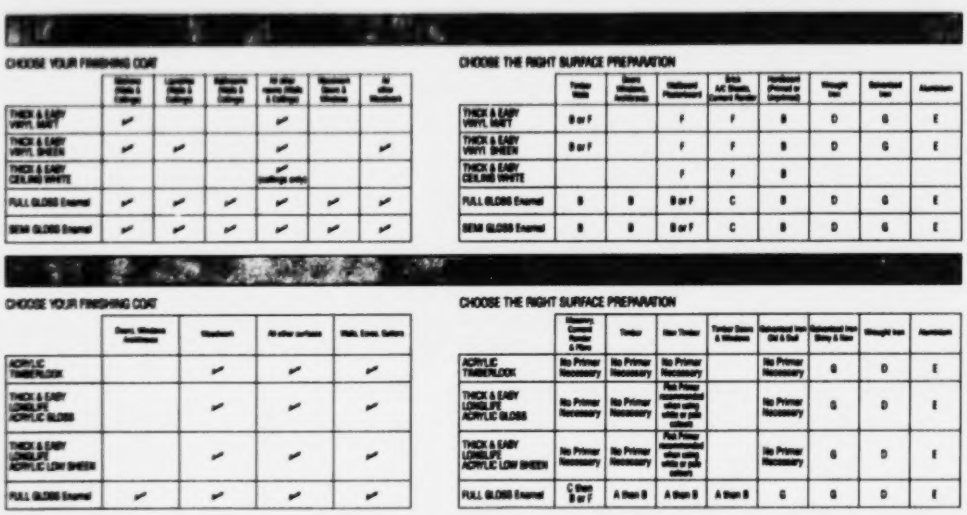
ALL ENQUIRIES TO BE REFERRED TO THE SALARIES SECTION OF YOUR DEPARTMENT

Reduced from original

QUESTION (written): **You need to prepare some new galvanised iron on the exterior of your home before painting it. You want to buy Berger paint. Consult the chart to see which product you should buy.**

Advanced Level

- 61% of those who attempted were right
- 51% of the whole sample were right


CHOOSE YOUR FINISHING COAT
CHOOSE THE RIGHT SURFACE PREPARATION
THICK & EASY VINYL MATT
THICK & EASY VINYL SHEEN
THICK & EASY CEILING WHITE
FULL GLOSS Enamel
SEMI GLOSS Enamel
CHOOSE YOUR FINISHING COAT
CHOOSE THE RIGHT SURFACE PREPARATION
ACRYLIC TIMBERLOOK
THICK & EASY LONGLIFE ACRYLIC GLOSS
THICK & EASY LONGLIFE ACRYLIC LOW SHEEN
FULL GLOSS Enamel

Reduced from original

FIGURE 3.1 Percentage of people correct who attempted items at Intermediate/Adept level on the document dimension by age, by level of education and by age at which NESB respondent started to learn to speak English.

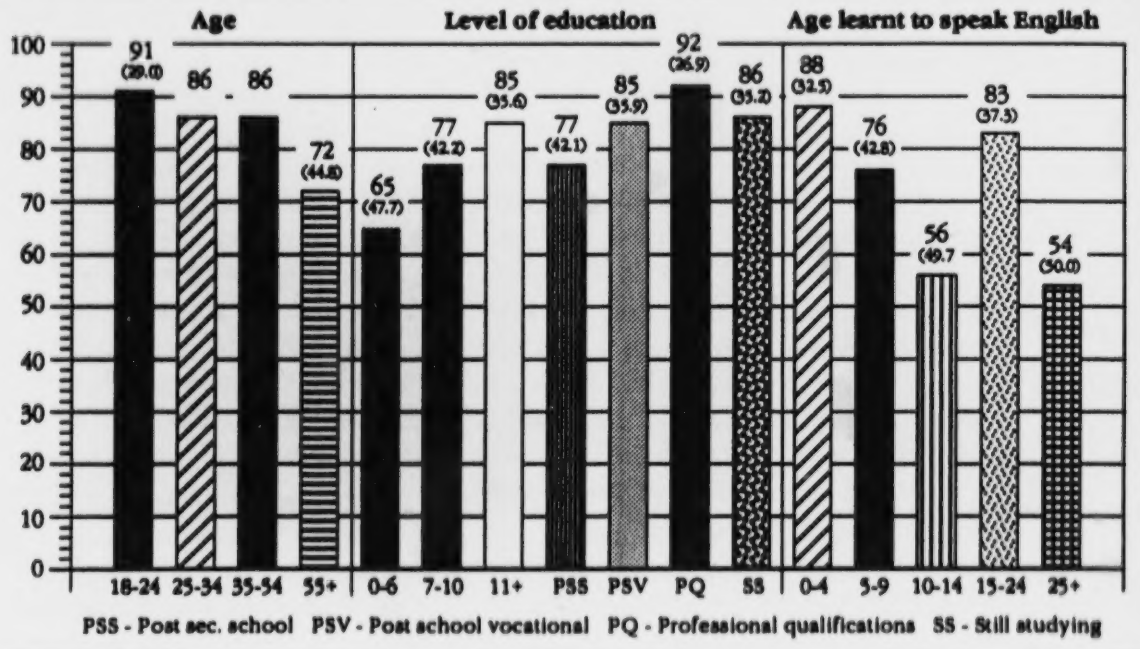
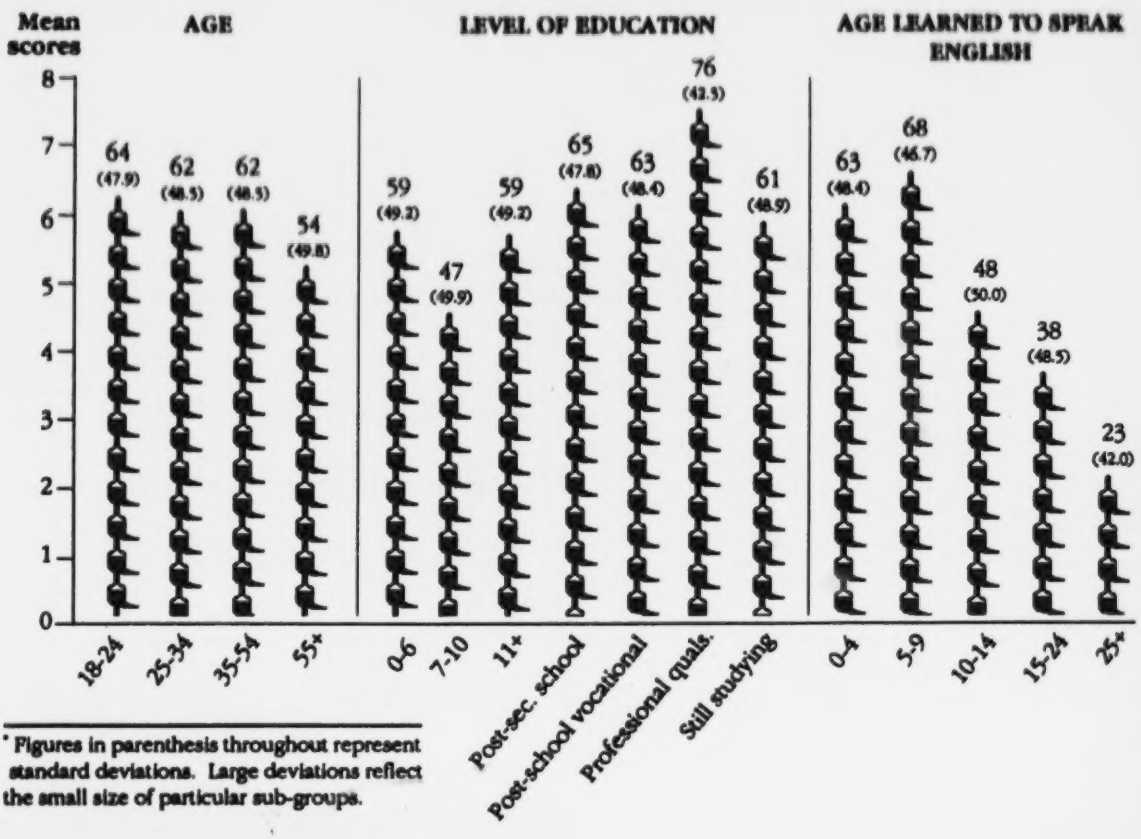


FIGURE 3.2 Percentage of people correct who attempted items at Advanced level.



* Figures in parenthesis throughout represent standard deviations. Large deviations reflect the small size of particular sub-groups.

We awaited the results to this particular question with great interest to see if it presented a different pattern of responses from other items at the higher levels of proficiency, particularly in relation to variables of level of education, occupation and language background. If the results did produce a different profile of responses it would add support to one of the assumptions behind this study, namely that literacy is not acquired in a linear way, but that different literacy skills are acquired as a result of different experiences.

The results appear to support this. The fact that only 76 per cent of those with professional qualifications got it right suggests that it was indeed a complex literacy task. But it wasn't nearly as hard as many other items which were placed lower down the document dimension for those with not more than six years of schooling. For example, the difference between the percentage of those with professional qualifications and those with six years or less of school identifying 'gross pay year to date' correct was 27. The difference on the paint chart was 17 points. In fact, 54 per cent of this sub–group were able to do this task which is close to the figure of 61 per cent correct of all those who attempted the item. However only 20 per cent of those who started to learn to speak English after the age of 25 were correct compared with 63 per cent of those who started to learn before they were four and 68 per cent of those who learnt between five and nine years of age. These results underline the importance of familiarity and practice as indicators of literacy ability.

From the data we can estimate that most Australian adults can handle documents at the Basic level although about 13 per cent of adults with six years or less of school may have some trouble with certain tasks. Similar patterns of proficiency appear with items placed up to about the middle of the scale.

After that point there is a distinct change in the levels of proficiency. The fact that only just over 6 out of 10 adults in the sample could write out a cheque for the minimum payment specified from a credit charge account (Adept level) may indicate that 6 out of 10 Australians are unfamiliar with such an activity. However it may also mean that an estimated 6 out of 10 Australians do not have the information processing skills to tackle this task. Amongst those with six years or less of schooling the figure drops to just over 4 out of 10.

There is greater proficiency with the task that asks the reader to locate the gross pay to date on a wage slip particularly among the 18 – 24 age group and those with professional qualifications. However, 23 per cent of those with 7 to 10 years of schooling, 28 per cent of those aged over 55 and 35 per cent of those with six years or less of schooling were unable to successfully complete this task. The most demanding task in this survey, placed at the Advanced level of proficiency, was the ability to use a paint chart. Just over half the sample population got this correct and just over 60 per cent of those who attempted it got it right. The age group that was most successful was the 18 – 24 age group.

Summarising levels of proficiency on the document dimension.

- Percentage of sample that scored zero - 1.2
- Percentage of sample that scored 100 - 14.6

TABLE 3.3 Comparison between various sub-groups at various levels on the document dimension

Levels	Percentages of sample correct			
	Aust. Whole	Aust. Attempted	Aust. 21-25	US. 21-25
Advanced	51	61	57	61
Adept	69	75	77	75
Intermediate	77	84	90	82
Basic	78	99	79	91
Rudimentary	96	98	99	97

PROSE LITERACY

Prose literacy concerns the knowledge and skills needed to understand and use various kinds of textual material. There are three aspects of prose literacy each of which extend over a range of difficulty. According to the NAEP Young Adult, these are:

- **"Locating information in text.** Readers who successfully perform these tasks match information given in the form of a question with either identical or corresponding information stated in text. The simplest task requires the reader to match information in a text on the basis of a single, commonly shared feature. The most complex task requires the reader to match on the basis of three categories of information that are not identically phrased in the question and the material.
- **Producing and interpreting text information.** Readers successfully performing these tasks use background knowledge as a combination of background and text information to produce a response that supports a statement or idea given in a question. The least complex task of this type asks the reader to write a brief description of a job he or she would like to have. The most complex task requires the reader to use information from a text to talk about the differences between two categories of work-related benefits.
- **Generating a theme or organising principle from text information.** Readers who successfully perform these tasks synthesise information to generate a theme or organising principle that is consistent with the arguments provided in a text. The most simple task of this type involves generating the theme of a poem that uses several familiar metaphors to imply the theme of 'war'. A somewhat more difficult task requires the reader to synthesise the main argument of a lengthy newspaper column.[1]"

TABLE 3.4 Prose literacy skills at five levels.*

	(scale 0 - 500)
ADVANCED	
Technology article: 3 feature match	400
ADEPT	
Technology article: oral interpretation of issues	340
INTERMEDIATE	
Swimmer article: one feature match with distractor	250
BASIC	
Swimmer article: one feature match.	200

*poskion of item on scale based on U.S. analysis

TABLE 3.5 Percentage of those who attempted items on the prose dimension.**

Item	Percentage of correct answers
Technology - interpretation of issues	32
Technology - who did what about the problem	55
Swimmer - what swimmer ate	84
Swimmer - age started to swim - age of swim	93

** The results suggest that these four items do not constitute a scale in the order suggested by the U.S. study. Further analysis of the texts may reveal what the differences were. However, for the sake of consistency these items will continue to be referred to as above.

The items were estimated to measure literacy skills at, approximately, the levels shown in tables 3.4 and 3.5 (at left).

It then becomes possible to look at the performance of the Australian population on a simple information processing task and compare this with performance on a complex task.

Performance on Prose Literacy

More than 6 per cent of those who attempted items on this dimension of literacy failed to get anything right. The question that asks the reader to identify the sentence that tells us what Mr Koorey ate during the swim, is estimated to be at

Basic level

- 84% of those who attempted were right
- 78% of sample group that were right

Swimmer completes Strait Marathon

SYDNEY - Self-employed business man, John Koorey set a record swim on Wednesday across the rough 25 kilometre Cook Strait between New Zealand's North and South Islands.

Koorey, 37 of Manly, New South Wales, climbed out of Cape Terawhiti at 7.00 pm. He began his arduous swim at 1.30 pm.

A spokes woman for the swimmer, Kay Barnes, said Koorey had kept up his strength with "banana sandwiches, hot chocolate, lots of water and granola bars".

Koorey had trained for the feat by swimming at least 80 kilometres a week. The Sydney native has competed as a swimmer since he was 17 and hoped to persuade Olympic authorities to add a long distance swimming event.

A charity concerned with teenage cancer patients solicited pledges for each kilometre he swam.

With this crossing, John Koorey took 69 minutes off the previous record which was set by John Coutts.

a. Underline the sentence that tells us what Mr Koorey ate during the swim

*b. At what age did Koorey begin swimming competitively?*_____

the Basic level of prose literacy. Only 84 per cent of those who attempted this item got it correct.

This means that at least 16 per cent of the adult population are estimated to be unable to accurately identify a single matching piece of information in a prose article. The figure drops to 11 per cent for adults aged between 25 and 34 but rises to 26 per cent for those aged over 55. This means that at least 26 out of every 100 adults in the sample aged over 55 were unable to achieve at this Basic level of literacy. NESB adults appear to perform at similar levels to the ESB in the middle age categories but not so well in the younger and older age groups. Almost 40 out of 100 NESB adults aged over 55 were unable to achieve this level.

The effect of the age at which respondents learned to speak English has a significant impact on the results. Ninety–one per cent of those who said that English was not the main language in their home while they were growing up, but began to learn English before they were five, achieved at this level. Ninety–four per cent of those who learnt to speak English between the ages of 15 and 24 were correct. The figure drops to 57 per cent for those who learnt to speak English after the age of 25.

Another variable which has a significant impact on literacy skill is the level of education of the respondent. Thirty–one in every 100 adults who had less than six years of schooling were unable to achieve this level. All those who had any form of post–school education performed as well as or better than the average. Ninety–three per cent of those with professional qualifications got this item correct.

These directional indicators of difference between sub–groups of the sample highlight the complexity of the issue of levels of literacy in the population. The figures presented here highlight differences but should not be taken to imply statistical significance in the strictest sense. The small size of some of the sub–groups in the sample will in itself explain some of the variance. The standard deviations reported give an indication of this. What these results do in particular is point the way for further research and suggest priorities for educational policy makers.

The tasks become increasingly complex higher up the prose literacy dimension. Sometimes the complexity relates to the number of feature matches the reader has to make in order to complete the task. Only 55 per cent of the sample

FIGURE: 3.3 Percentage of people correct who attempted items at the Basic level on prose dimension by age at which NESB respondent started to learn to speak English.

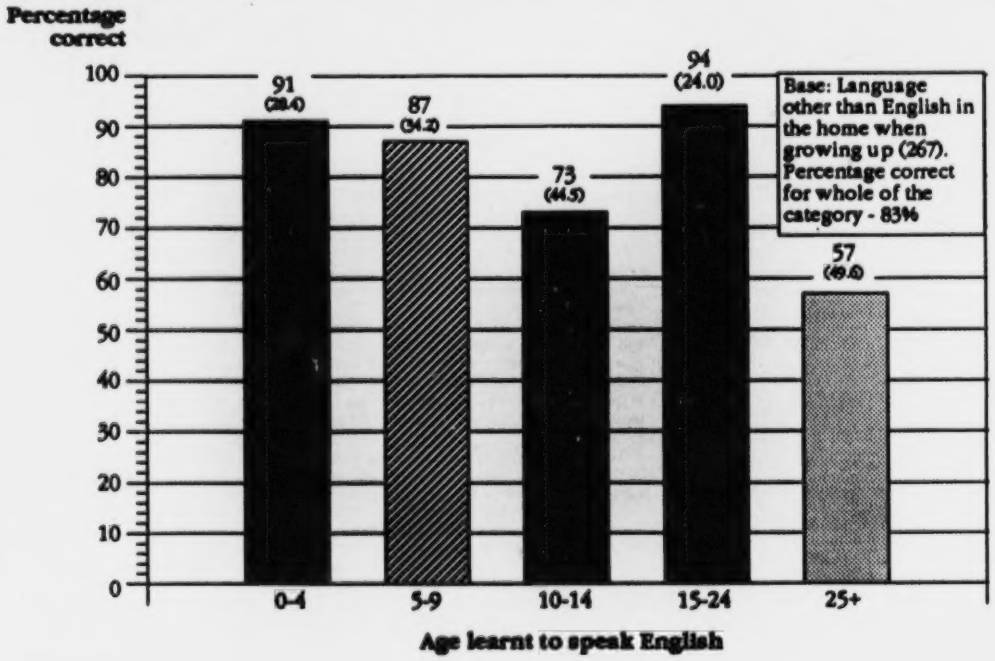
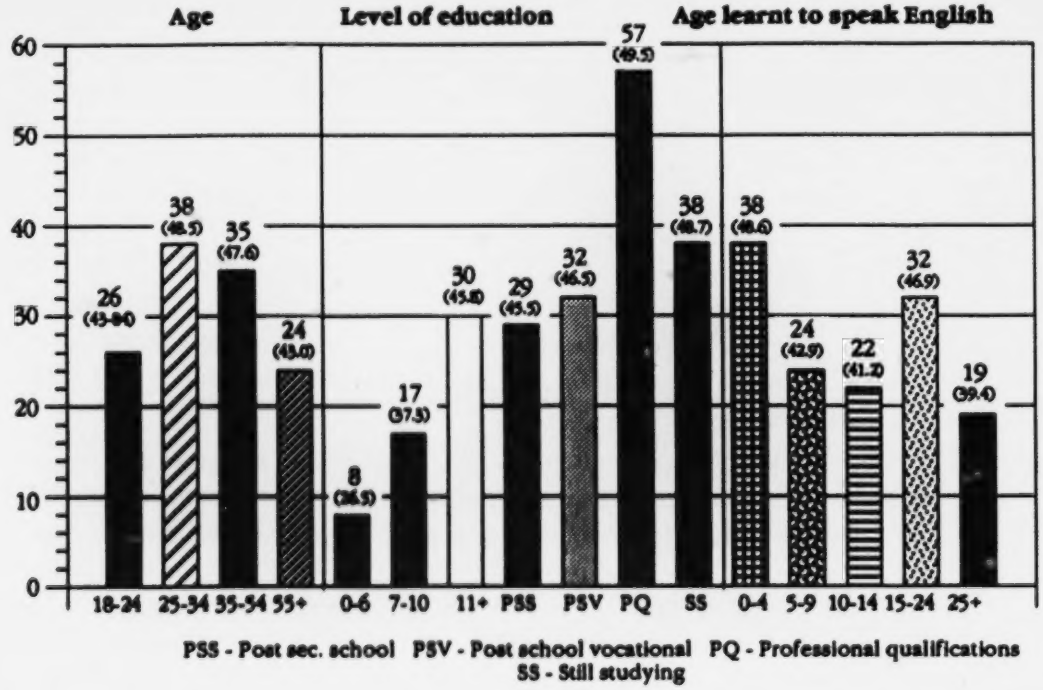


FIGURE: 3.4 Percentage of people correct who attempted items at the Adept level on prose literacy by age, by level of education and by age at which NESB respondent started to learn to speak English.



QUESTION (written): **The story of the Rioses shows that developments in technology can lead to issues affecting society as a whole. Can you tell the interviewer what you think these issues are?**

Adept level

- 32% of those who attempted item were right
- 27% of whole sample were right.

WORLD NEWS

TECHNOLOGY CREATES THE NEED FOR NEW RULES

Science has a way of getting ahead of law and ethics. That happened dramatically in 1945 on the destructive side of life with the atomic bomb, and is now happening on life's creative side with techniques to overcome human infertility.

Most of us rejoiced with the Brown family in England when Louise, the first test-tube baby, was born six years ago. And we have marvelled at other firsts - most recently the births of healthy babies that had once been embryos frozen to await the proper moment of implantation in the mother-to-be.

It is about two such frozen embryos in Australia that a storm of legal and ethical questions arose. The embryos were destined to be implanted in Elsa Rios, wife of Mario Rios. A previous embryo implant had been unsuccessful, and the Rioses wanted to have another chance at becoming parents. But before they had a second chance to try, the Rioses perished in an airplane crash.

What was the Australian hospital to do with the frozen embryos? Could they be implanted in someone else? There were numerous volunteers. Were the embryos somehow entitled to the Rioses' substantial estate? Or should the embryos be destroyed? The Rioses, understandably, had made no provision for the embryos' future.

The Australians set up a commission to study the matter. Last week, the commission made its report. The embryos should be thawed, the panel said, because donation of embryos to someone else would require the consent of the "producers," and no such consent had been given. The panel also held that the embryos in their present state had no life or rights and thus could be destroyed.

The commission members were conscious of treading on slippery legal and ethical grounds. Therefore, they urged that three months be allowed for public opinion to respond to the commission recommendation. Should there be an overwhelming outcry against destroying the embryos, the commission would reconsider.

Couples now enrolling in Sydney's Queen Victoria hospital for in vitro fertilization programs must specify what should be done with the embryos if something happens to them.

This assures that a situation similar to the Rioses won't recur. But what of other complex questions? In France, a woman recently had to go to court to be allowed to bear a child from her deceased husband's frozen sperm.

What if a surrogate mother here breaks her child-bearing contract and refuses to give up the infant she had promised to bear for someone else?

Our society has failed so far to come up with enforceable rules for curbing the destructive potential of atomic power. We are reaping the nightmarish harvest from that failure. The possibilities of misuse of scientists' ability to advance or retard procreation are manifold. Ethical and legal boundaries need to be set before we stray too far.

Reduced from original

were correctly able to match 3 corresponding features of information.

Sometimes, as in the illustration here, prose literacy relates to the ability to interpret text, to get at the concepts behind the story. In this case the respondent was asked to say what the issues were in the editorial. All responses were recorded verbatim by the interviewer and scored by the same scorer. At this 340 level, just below Advanced, performance is very poor. Only 32 per cent achieved at this level. This is only just higher than 3 in 10 adults. This supports other findings that the level of proficiency declines sharply as the literacy demands become more complex and abstract.

At this level the most successful category was those with professional qualifications in which 57 per cent were correct followed by those still studying or in the 25 – 34 age group in which 38 per cent were correct. Only 24 per cent of those aged over 55 achieved at this level. A non–English–speaking birthplace made little difference to the scores, with 37 per cent of the 25 – 34 age group achieving at this level. The effect of the age at which people from homes where English was not the major language spoken is consistent with the results reported for the Basic task. Those learning by 4 or between 15 – 24 perform better than the average. It is extremely disturbing that so many members of the adult population appear to be unable to interpret text. Only 8 in 100 of those who had six years' school or less achieved at this level. Put these scores against the result that 72 per cent of the sample said they read newspaper editorials and it suggests that the media must have a great influence on the interpretation of events for much of the population.

There were only four items on the prose dimension (the two writing or 'generating text' items were excluded after the pilot as no valid way could be found of scoring answers right or wrong). However these results give sufficient information to suggest that the prose literacy performance of adult Australians drops markedly when more than simple interpretations of text

are required. The results that we do have suggest that only about a third of the population possesses analytical thinking skills when it comes to understanding prose text.

Summarising levels of proficiency on the prose dimension

- Percentage of sample that scored zero: 6.6%
- Percentage of sample that scored 100: 21.7%

TABLE 3.6 Comparison between various sub-groups at various levels on the prose dimension.

Levels	Percentages correct			
	Whole Aus.	Attempted Aus.21-25	Aus.21-25	U.S.21-25
Advanced	46	55	50	40
Adept	27	32	29	?
Intermediate	87	93	96	81
Basic	78	84	83	93

NB. There were no items at the Rudimentary level.

QUANTITATIVE LITERACY

Successful performance on the quantitative scale requires 'the use of mathematical operations such as addition, subtraction, multiplication and division - either singly or in combination - to solve (numerical) problems that are embedded in varying degrees in printed material.'[2]

Proficiency on this scale seems to be a function of:

- the particular operation called for
- the number of operations needed to perform
- the task
- the extent to which the task is embedded in printed material.

Because the concept of quantitative literacy involves number within print, there is some overlap in the skills and strategies required on the quantitative scale with those needed on the prose and document literacy scale. The correlations in performance are .44 and .57 respectively, suggesting a greater relationship between the skills required for document and quantitative literacy tasks than for prose and quantitative literacy tasks.

The items were estimated to measure quantitative literacy at, approximately, the levels shown in Tables 3.11 and 3.12 (next page).

Apart from the change from the lunch menu item, the results of this survey support the order in which the items were placed on the NAEP scale.

Performance on Quantitative Literacy

The task placed between the Basic and Intermediate level on the quantitative dimension asks the reader to total two entries made on a bank deposit slip.

Basic/Intermediate Level
▶ 84% of those who attempted were right ▶ 77% of the whole sample were right

Although the majority of those who attempted this item got it right, in only one group, those with professional qualifications, did more than ninety per cent get it right. Thus at least 10 per cent of the sample could not accurately total two entries made on a bank deposit slip.

As the tasks increase in difficulty performance drops markedly. With the item that instructs the reader to enter two withdrawals and two depos-

its in a bank record book and keep a running total, the number of people correct drops by about 20 per cent over almost all categories. The exception is those who have had less than 6 years of schooling in which only 27 per cent of those who attempted it were correct, which is a drop of nearly 40 per cent. The most able groups at this level were those with professional qualifications with 73 per cent correct.

The hardest task on this dimension asks the reader to calculate how much extra a meal would cost on a public holiday when a 10% surcharge operates, after calculating the cost on a normal day. As with almost all the tasks, the two groups that were least able to perform at this level are those aged over 55 where less than 5 out of 10 were successful and those with six years or less of schooling where only 2 out of 10 were able to do the task. The most successful groups were those with professional qualifications with 64 per cent correct and those who come from homes where English was not the main language spoken but who started to read English by 4 years of age. Unlike items on the other two scales where the age the respondent learnt to **speak** English positively affects the scores, with quantitative literacy, it is the age of learning to **read** English which seems to have a greater effect. Both scores are presented in the Tables.

TABLE 3.7 Items chosen for Australian study - quantitative scale.*

	(Scale 0 – 500)
ADVANCED	
Menu - 10% surcharge	355
ADEPT	
Airline Schedule A	340
Menu - change from $5	335
INTERMEDIATE	
Airline Schedule B	300
Account Record Book	290
BASIC	
Deposit slip - total	230

*position of item on scale based on U.S. analysis

TABLE 3.8 Percentage of people correct of those who attempted items on the quantitative dimension.

Item	Percentage correct
Menu - 10% extra	51
Airline Schedule - Brisbane traveller	56
Airline Schedule - Sydney traveller	62
Account record	63
Menu - change	69
Deposit slip - total	84

QUESTION: (part B, of a two–part question) **How much would the same order cost on a public holiday?**

Advanced Level

- 50% who attempted this item were right
- 43% of the whole sample were right

Advertisement

BURLINGTONS

Soups - Made by our Chef Daily
Onion Soup — 1.60
Soup of the day — 1.60

Hot Dishes
King-burgers:
1/4 lb. of the finest Beef available, seasoned to perfection and served on a buttered bun — 3.00
Chedder cheese burger — 2.45
Pineapple burger — 2.45
Bacon burger — 2.60
Chedder cheese and bacon burger — 3.00

Sandwiches
Sliced Turkey - Garnished — 2.50
Turkey Salad - Garnished — 2.25
Chicken Salad - Garnished — 2.25
Tuna Fish Salad - Garnished — 2.00
Sliced Beef Tongue - Garnished — 2.50
Grilled Cheddar Cheese — 1.95
[redacted] Special: — 2.95
Tender roast beef, melted swiss cheese, home-made pickles on seeded rye. Need we say more?

Minimum charge - $2.00
Holiday surcharge - 10%

Reduced from original

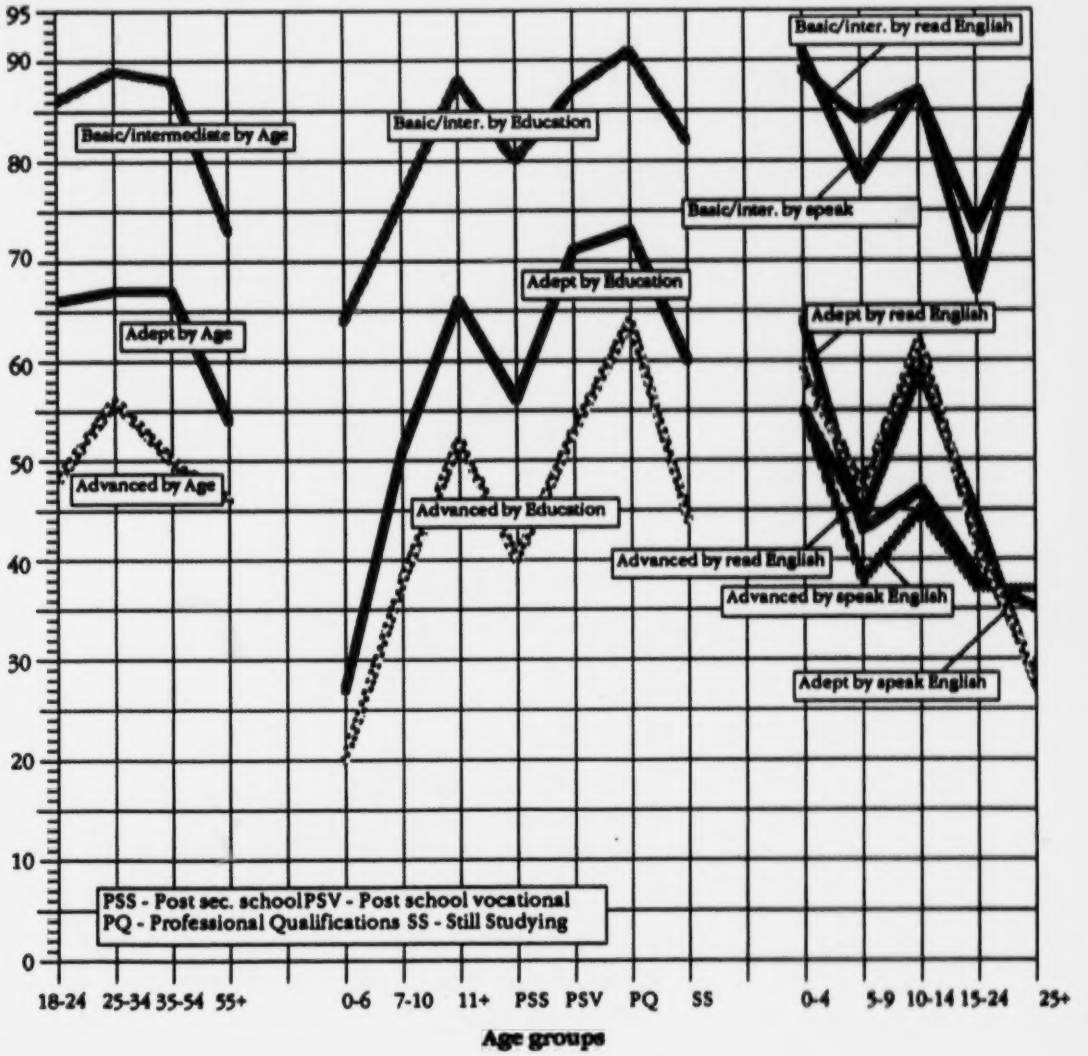
TABLE 3.9 Comparison between various sub-groups at levels on the quantative dimension.

Level	Percentage of correct answers			
	Aust. Whole	Aust. attempted	Aust. 21-25	US. 21-25
Advanced	43	50	49	39
Adept	55	63	60	59
Intermediate/Basic	77	84	75	87

Summarising levels of proficiency on quantitative diversion

- Percentage of sample that scored zero - 10
- Percentage of sample that scored 100 - 19

FIGURE 3.5 Percentage of people correct who attempted items at various levels on the quantitative literacy dimension by age, by level of education and by age at which the NESB respondent started to learn English.



SUMMARY OF FINDINGS

This section shows performance on each of the three dimensions. It shows the impact of 3 background variables on performance on selected items and compares the performance of Australian and American samples of 21 - 25s on selected items. All the 21 - 25s scores are based on the whole of that sample.

Document Dimension

1 One per cent of the sample failed to get any items on the document literacy dimension correct.

2 Two per cent of those who attempted were unable to sign their name correctly on a Bankcard. Four per cent of the whole sample failed to achieve this task. Nintey–nine per cent of all 21 - 25s were correct compared with 97 per cent of all 21 - 25s in the U.S. sample.

3 Ninety–nine per cent of those who attempted to enter the date on a bank deposit slip were correct. The percentage correct for the whole sample was 78 per cent. This is estimated to be at the Basic level. Seventy–nine per cent of all 21 - 25s were correct compared with 91 per cent of all 21 - 25s in the U.S. sample.

4 At the Advanced level, respondents were asked to identify from a manufacturer's paint chart which product would be needed to do a particular paint job. Sixty–one per cent of those who attempted this task were correct. Fifty–one per cent of the whole sample were correct. Fifty–seven per cent of all 21 - 25s were correct compared with 61 per cent of all 21 - 25s in the U.S. sample.

5 Eighty–four per cent of those who attempted items at the Adept level achieved at that level. Seventy–five per cent of those who attempted items at the Adept level achieved at that level.

The mean score for this dimension was 80, 6 t the median was 84. This means that more people scored above the mean than below.

Prose Dimension

1 Of the sample 6.6 per cent failed to get any items on this dimension correct.

2 Eighty–four per cent who attempted were correct at the Basic level (identify what a swimmer ate, from a news story). Eighty–three per cent of all 21 - 25s were correct compared with 93 per cent of all 21 - 25s in the U.S. sample.

3 At the Intermediate level, (identify age with distractor of another age present in the story) 96 per cent of the Australian 21 - 25s were correct compared with 81 per cent of the American sample.

4 At the Advanced level, identifying a three feature match in a lengthy editorial, 55 per cent of those who attempted were correct. Fifty per cent of the 21-25s were correct compared with 40 per cent of the American 21-25s.

5 However 68 per cent of those who attempted were unable to say what the issues were behind a lengthy editorial article.

6 The mean score for this dimension was 64. The median was between 66 and 75 which means that more people scored above the mean than below.

7 The fact that only 21.7 per cent of the sample of 1500 got all four items correct is cause for concern.

Quantitative Dimension

1 The scaling procedure adopted by the NAEP Young Adult established that literacy tasks involving numeracy yield lower scores. The items selected are estimated to start at just below the Intermediate level.

2 At least 10 per cent of the sample population were unable to total two entries on a bank deposit slip.

3 Thirty–one per cent of those who attempted to calculate what change they would receive from $5 dollars after ordering two specified items

from a lunch menu were unable to do so. Thirty per cent of all 21 - 25s were incorrect compared with 50 per cent of the U.S. 21 - 25s.

5 The hardest task, estimated to be at the Advanced level, was to calculate a 10 per cent holiday surcharge on a bill of two specified items totalling less than five dollars. This could not be done correctly if the initial addition was incorrect. Sixty–nine per cent of those who attempted that addition got it correct. However only 50 per cent of the sample who attempted the percentage got it correct. Forty–nine per cent of the 21 - 25s got this item correct compared with 39 per cent of the U.S. 21 - 25s.

6 Ten per cent of the sample failed to get any items correct on the quantitative dimension.

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[1]Kirsch, I. and Jungeblut, A. 1986a. p.8-9
[2]Kirsch, I. and Jungeblut, A. 1986a. p.30

4. Explaining Variations in Literacy Performance

MUCH OF THIS REPORT HAS BEEN ABOUT INTERpreting the interaction of one or two variables with literacy proficiency on the three dimensions of literacy or in relationship to specific literacy items. Important as this information is and significant as it may be in providing clues for further analysis of the data, it should not be seen as more than providing clues. The processes by which people acquire and maintain their literacy is complex. To discover that certain variables are related to literacy proficiency is really only describing a situation that exists. It does not explain that situation. The variables identified do not operate in isolation but interact in complicated ways with performance. This of course is why the education system alone cannot be held responsible if some adults leave their schools with low levels of literacy proficiency.

EFFECTS OF CURRENT LITERACY ACTIVITY

This study has attempted to gain a greater understanding of the extent to which the background factors are related to performance on the document, prose and quantitative literacy dimensions. The relationship of background factors to performance over the whole assessment was also explored.

Using regression techniques, analyses were conducted for the sample as a whole and also for the 21 – 25 year olds. For both groups, two approaches were taken. One was to examine the role that current literacy practice plays in predicting performance and the other was to consider the influence of the remaining background variables on performance, once current literacy practice had been removed from the analysis.

For the sample as a whole, current literacy practice was measured by the number of different types of documents, books and parts of a newspaper respondents tended to read. Of these three variables, the best predictor, overall, for performance on the 3 individual literacy dimensions as well as the combined score, was the document variable which contributed to explaining between 12 per cent and 15 per cent of the performance variance. The amount of variance increased to some extent when the number of types of books was added to the number of documents read. However, adding the number of parts of a newspaper read to the analysis only slightly increased the amount of explained variance.

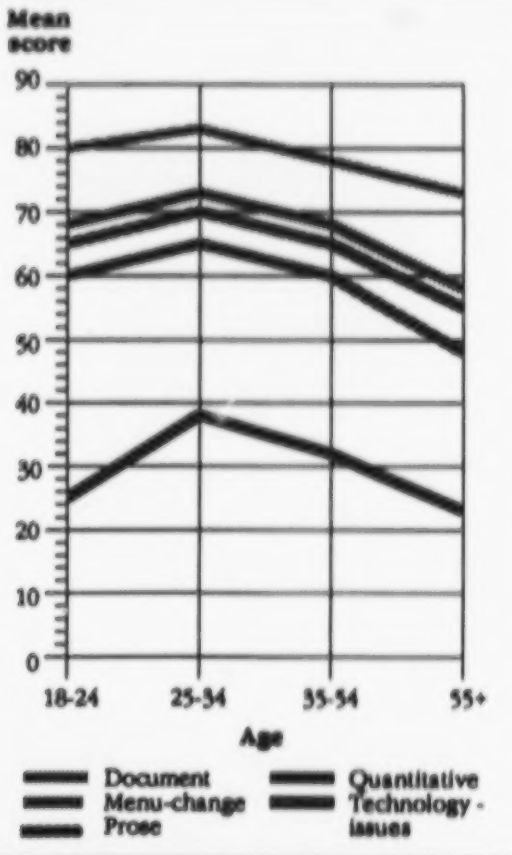
For the 21 – 25 year olds, the influence of current literacy practice presents a slightly different picture. For the document literacy dimension and combined score the number of types of books read was the best predictor of performance, contributing to 11 per cent of the variance, whereas for the prose and quantitative dimensions the number of types of documents read was the best predictor. The implication here is that literacy is not a fixed ability and suggests that the

more opportunities people have to practise their literacy skills the more proficient they become.

This difference between the results of these two groups may be a function of the relative amount of experience with documents. It seems reasonable to suggest that experience with various kinds of documents may increase with age and thus become a more significant part of the current literacy activities of an adult and thus a better predictor of variance.

Although the finding that current literacy practices is a useful predictor of performance and supported the belief that the more people make use of their literacy skills the more proficient they are likely to be, to the reader it may be little more than a truism. So the regression was repeated with this variable excluded from the analysis.

FIGURE 4.1 Age by literacy dimension by two items.



EFFECTS OF OTHER BACKGROUND VARIABLES

With current literacy practice removed, the best predictor of performance for the sample as a whole on the three literacy dimensions plus the combined score was level of education. This variable accounted for between 10 per cent and 15 per cent of the performance variance. Adding another four background variables to the analysis increased the amount of variance explained to between 17 per cent and 23 per cent. Of these four background variables both age (see Figure 4.1) and number of childhood literacy support materials featured as predictors for all performance dimensions. Having English as the only language spoken at home whilst growing up contributed to performance on the document dimension as did having English plus another language at home. The age at which respondents learnt English contributed to both the prose and quantitative dimension. Adding a further 5 background variables to the analysis (making 10 in all) lead to only a slight increase in explained variance, from 17 per cent – 23 per cent up to 18 per cent – 25 per cent.

For the 21 – 25 year olds, both level of education and number of childhood literacy support materials featured predominantly as predictors. Level of education was the best predictor for the prose literacy dimension and the combined score, whereas for the document and quantitative literacy dimensions, the number of childhood literacy support materials in the home was the single variable which accounted for most of the variance. Both these variables accounted for between 7 per cent and 10 per cent of the performance variance on their respective dimensions. Highest parental occupation accounted for some of the variance on the prose and document dimensions and combined literacy score, the age at which the respondent learnt English were important for predicting scores on the quantitative dimension. Overall, for the 21 – 25 year olds, a combination of four background variables contributed to between 14 per cent and 18 per cent of the explained variance.

What this analysis tells us is the extent to which the background variables measured can predict level of performance. The finding that as many as 10 variables explain only 18 – 25 per cent of the variance is an indication of how complex this issue is. It does not seem possible to pin–point one or two key factors in a person's background which will predict their literacy performance. If such a factor exists it was not identified by this study. Level of education is the most significant but that in itself is a complex issue. There are many possible alternative underlying socio–economic explanations which have a bearing on level of education and it is the complex inter–relationship of these other factors which are likely to affect literacy proficiency.

The study attempted to discover if there was a pattern in the responses to the questions which asked about reasons people give for having literacy difficulties as a child. Ill health and socio-economic reasons were the most common explanations offered. The socio–economic reasons ranged from having to work on the family farm, to the impact of war, to money problems at home, to being in a large family and having no privacy. A number of other explanations were offered, such as parents' health and parents' attitude to school. These findings serve to emphasise the complexity of the issue of literacy standards in society and act as a reminder that literacy is as much a sociological phenomenon as an educational one.

SUMMARY OF FINDINGS OF CHAPTER 4

1 Current literacy practice, particularly in relation to documents, is the best predictor of the literacy performance of adults.

2 When this variable is removed from the analysis, the best predictor is level of education, followed by age and then the number of childhood literacy support materials in the home.

3 English as the only language spoken at home contributed to performance on the document dimensions.

4 The age at which the respondents started to learn English contributed to performance on both the prose and qualitative dimensions.

5 In the 21 – 25 age group, level of education and childhood literacy support materials were the best predictors of performance. Age at which the respondent learned English was important for predicting scores on the quantitative dimension.

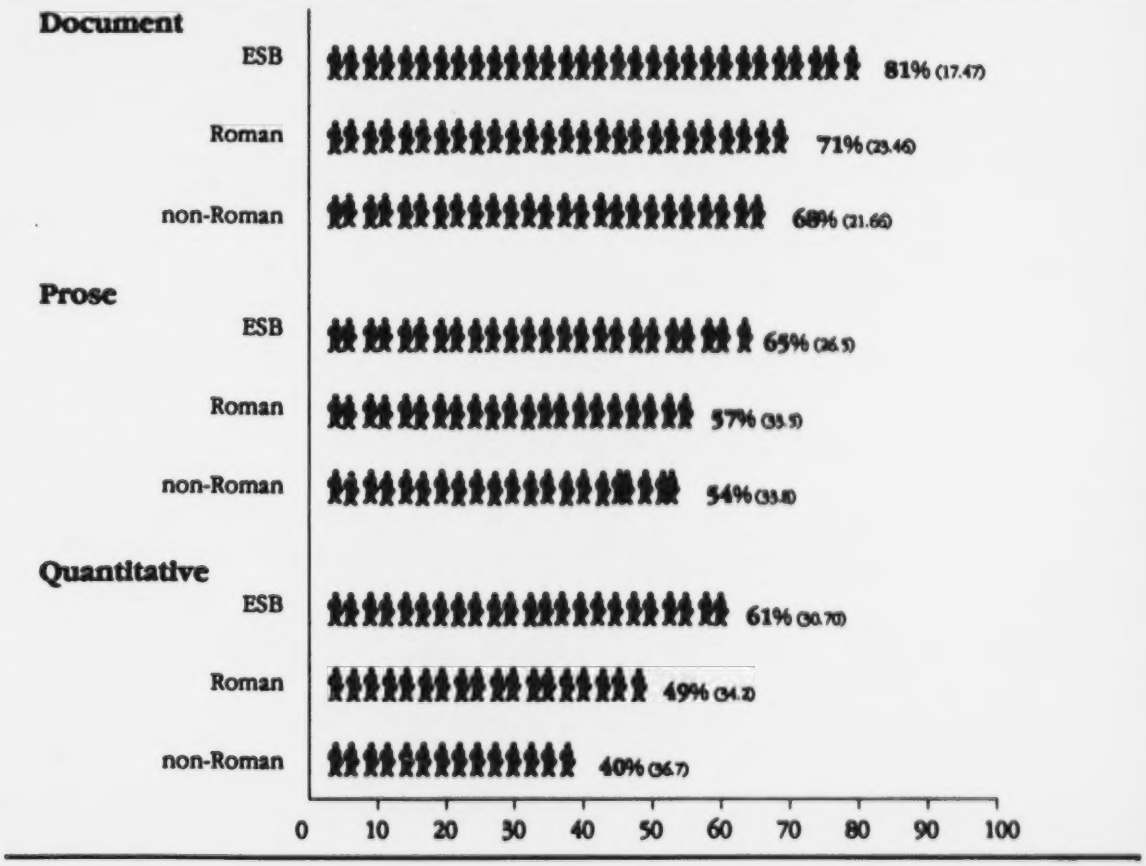
5. Literacy in English and the Non-English Speaking Born

'Inability to perform literacy tasks at a level well above that attained by significant sections of the migrant population will result in quite acute forms of disadvantage and marginalisation."

M. Kalantzis, R. Gutney, B. Cope

A CRITICISM OFTEN LEVELLED AT SURVEYS OF adult literacy is that they do not take into account literacy proficiency in languages other than English. The logistical and cost implications of attempting to measure literacy in other languages are very high and similarly beyond the scope of this study. Any findings from this study should be treated with caution because the numbers of people who are non–English speaking born (NESB) in a national sample of 1500 is small and any particular sub–group within that category even smaller. The sampling procedure adopted for this study did yield a NESB population of 14 per cent which is lower than that produced by

FIGURE 5.1 Differences in performance according to script of country of birth.



the 1986 census (16.5 per cent). Of this 14 per cent, 10 per cent came from a country with a Roman script language and 4 per cent from a country with a non–Roman script background.

One hundred and fourteen contacts from NESB were excluded from the sample because interviewers stated they would need an interpreter to communicate with them. If the refusal rate of the survey as a whole was applied to this group it would have yielded a further 46 interviews. The addition of these 46 interviews would have represented a 17 per cent NESB sample. This suggests that the sampling plan yielded a representative sample of NESB.

With the provisos about the sample size in mind, this study provided a significant opportunity to identify characteristics in the backgrounds of people from non–English–speaking countries that relate to their proficiency in literacy in English.

Table 5.1 shows how the percentages of NESB who attempted items and got them correct com-

TABLE: 5.1 Comparison of percentages of people getting items correct from an English speaking background with those from a non-English speaking background.

Item	Percentage Correct		
	ESB sample	NESB sample	Difference
Document Items			
Bankcard - sign name	98	96	- 2
Licence - circle expiry date	97	91	- 6
Medicine label - instructions	55	52	- 3
Deposit slip - enter date	99	98	- 1
Map -locate intersection	97	93	- 4
Yellow Pages - find. tel.no.	92	88	- 4
Deposit slip -cheque entry	96	94	- 2
Deposit slip -cash entry	88	74	-14
Pay slip - gross pay to date	85	71	-14
Yellow Pages - find heading	75	64	-11
Paint chart - identify use	75	64	-11
Charge account - write cheque	72	50	-22
Job application form - past details	69	48	-21
Paint chart - identify product	62	53	- 9
Prose (Newspaper) Items			
Swimmer - age	92	90	- 2
Swimmer - food	84	79	- 6
Technology - what Aus. did	55	35	-20
Technology - issues	32	26	- 6
Quantitative Items			
Deposit slip - total	84	77	- 7
Menu - change	71	60	-11
Record of financial transactions	66	47	- 9
Flight schedule - from Sydney	59	59	0
Flight schedule - from Brisbane	55	45	-10
Menu - 10% surcharge	51	43	- 8

pares with the percentages of the English-speaking born (ESB) sample.

This information suggests that around 4 per cent more of people who are born in non–English speaking countries are unable to perform at Basic levels of literacy. This figure increases to around 10 per cent as the levels of literacy become more complex. There is a difference of over 20 per cent on two items, however other factors may be influencing these results such as unfamiliarity with Australian banking procedures or an unwillingness to give personal information on a form. However care should be taken in the interpretation of these findings as the difference of one per cent at lower levels of proficiency may be as significant or more significant than a difference of one per cent in the middle ranges.

Information in the remainder of this section will report findings in terms of the age of the respondent, the length of residence in Australia, the age at which the respondent learned to speak and/or read English and the amount of schooling in English. It will also report whether people who were NESB were more likely to seek assistance with everyday literacy tasks than the ESB.

The script of country of birth was used as a basis for identifying the background of NESB respondents for two reasons: because it might produce some interesting data and because classifying respondents by country of birth or nationality would result in groups too small to give reliable indications about the NESB population as a whole. The findings suggest that although there appears to be a difference in performance on the three literacy scales according to the script of country of birth, it is less than the difference between the scores of those from an English speaking background and those from a non–English speaking Roman script background. The Table also shows what effect the scores of the NESB has on the mean score for the sample as a whole. When these scores are excluded, as in the ESB category in this table, the mean scores on each dimension only rise by one point. This suggests that the scores for the NESB are distributed throughout the score ranges and not concentrated among the lower scores.

The mean scores for the non–English speaking born sample were lower on each literacy dimension than those for the English speaking born sample. The differences were 11 per cent on the document dimension, 12 per cent on the prose dimension and 15 per cent on the quantitative dimension.

EFFECT OF AMOUNT OF ENGLISH IN CHILDHOOD

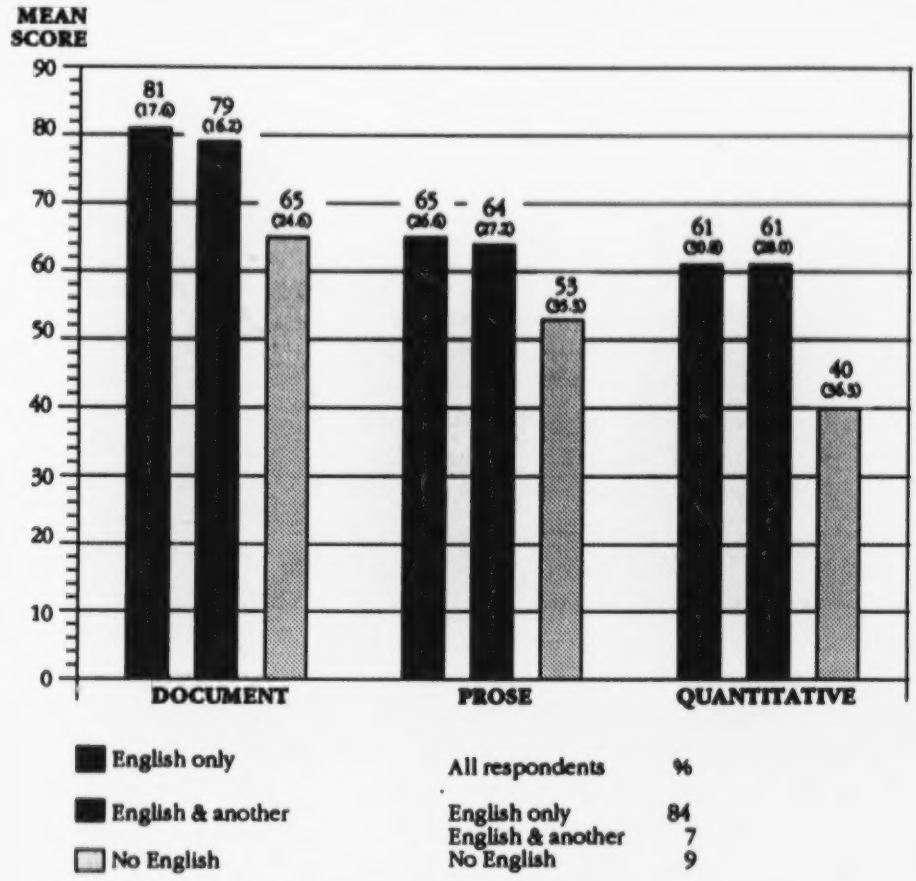
The questions relating to contact with English during childhood were asked of all respondents who said that English was not the main language of their childhood. This represents just under 18 per cent of the sample and includes Australian–born people for whom English was not the main language spoken in the childhood home.

As expected the amount of contact with English experienced by respondents had an effect on literacy performance in English on the three dimensions, document, prose and qualitative literacy, although there are interesting variations in the findings relating to particular literacy tasks.[2] This may be a function of the characteristics of this particular sample.

The following Figures show the impact of the amount of English spoken in the home, the age at which the respondent started to learn to speak English and the amount of schooling in English. What is particularly interesting is that the performance of those who had a significant amount of contact with English at an early age in addition to their own language produced mean scores higher than the overall sample population.

First though it is important to establish whether this can be explained by the numbers of NESB in the sample who arrived in Australia young and who would thus have received all their education in the medium of English. Of the 23 per cent who were not born in Australia only 4 per cent arrived before they were nine years old. As this figure includes both ESB and NESB it suggests that age of arrival in Australia is not as significant as the amount of contact with English whether in Australia or overseas.

FIGURE 5.2 Language most often spoken at home while growing up.



Figures 5.2, 5.3 and 5.4 relate performance on the three literacy scales to contact with English as a child. Figure 5.2 shows that the presence of another language in the home makes very little difference to the scores as long as English is also spoken in the home. Scores drop significantly when there is no English in the home, particularly on the quantitative literacy dimension.

Figure 5.3 shows performance related to the amount of schooling in the medium of English. There is little difference between all schooling in English and most schooling overseas in English. There is virtually no difference between the scores of those with some or no schooling in English overseas. These scores are approximately 20 points lower than those with all or most schooling in English except on the prose dimension where it is 10 points lower. The performance of those with no school was not markedly lower on the document dimension but was much lower on the other two. The mean score for this category on the quantitative dimension was two. This gives much cause for concern given that the 1986 census revealed that 25,000 people born in Australia have not attended school or gone beyond kindergarten.

Figure 5.4 gives information about the effect of the age of learning to read English on levels of literacy performance on the three literacy dimensions. On the document dimension there appears to be a straightforward relationship between the age at which the respondent started to learn to read English and performance on this dimension. The mean score for the English speaking born sample was 81. However those for whom English was not the main language

FIGURE 5.3 Schooling in the medium of English.

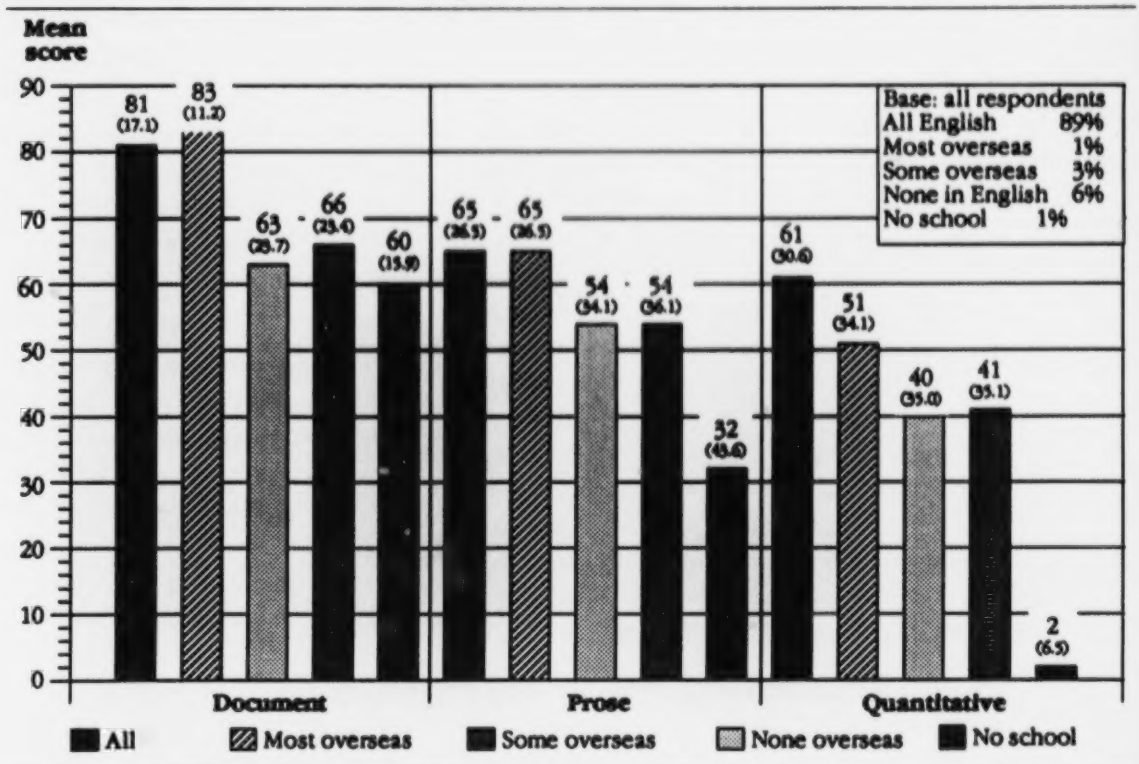
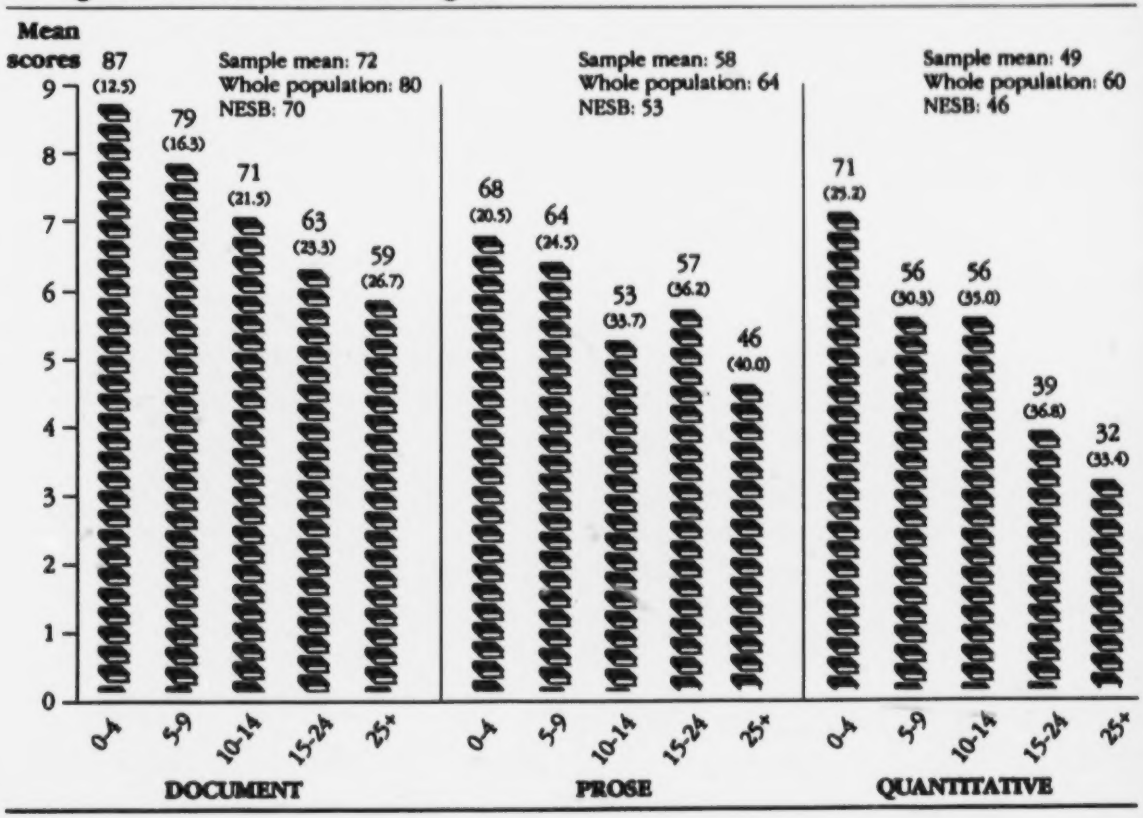


FIGURE 5.4 Age started to learn to read English.



spoken at home and who started to learn to read English before they were five years old, produced a mean score on this dimension of 87, dropping steadily to 59 for those who did not learn to read English until they were aged 25 or more.

On the quantitative literacy dimension, the mean score for the whole sample was 60 whereas the mean score for those who started to learn to read English before five years of age was 71, dropping to 56 for those who started to learn to read English between five and fifteen. Performance on the prose literacy dimension showed a slightly different pattern with a dip in the age group which started to learn to read English between ten and fourteen years of age, a rise in the fifteen to twenty–four group followed by a steeper dip in those who started to learn to read English aged twenty–five or over.

HELP SOUGHT FOR EVERYDAY LITERACY TASKS

Are people with literacy and numeracy problems more likely to ask for assistance with certain everyday tasks? If so, are people who are from NESB more likely to ask for this assistance than those who are not? The information in Table 5.2 suggests that this is the case.

The finding that 49 per cent of NESB felt they would need to seek assistance with government and business information is a strong message about the problems people have with officialese. The finding that 10 per cent of the whole sample seek assistance with Medicare claim forms adds weight to this message.

Does this need for assistance increase with age? Is failing eyesight the reason for the difficulty with official documents? This does not appear to be the case. In both the whole sample and the NESB sample, the age group 35 – 54 appeared to seek the greatest assistance. The only exception to this result was with help with 'reading the names of products in stores and supermarkets'.

Twenty–four per cent of the NESB had attended migrant English classes; 11 per cent for less than twelve weeks, 7 per cent between twelve weeks and one year and 6 per cent for more than one year. About one quarter of these had attended full time.

TABLE 5.2 Comparison between percentage of people asking help from the whole sample and from the NESB sample.

Question: Some people get help for reading and writing tasks from family members or friends. Do you sometimes ask for help from others in.....?

	Percentage	
	Whole sample (1496)	NESB sample (198)
Reading information from		
Government agencies or businesses	34	49
Reading newspaper articles	6	16
Filling out a Medicare claim form	10	17
Writing notes and letters	9	26
Reading instructions on a medicine bottle	5	11
Finding a telephone number	5	11
Reading the names of products in stores and supermarkets	2	3
Filling in a bank deposit slip	3	9

AGE AND LENGTH OF RESIDENCE

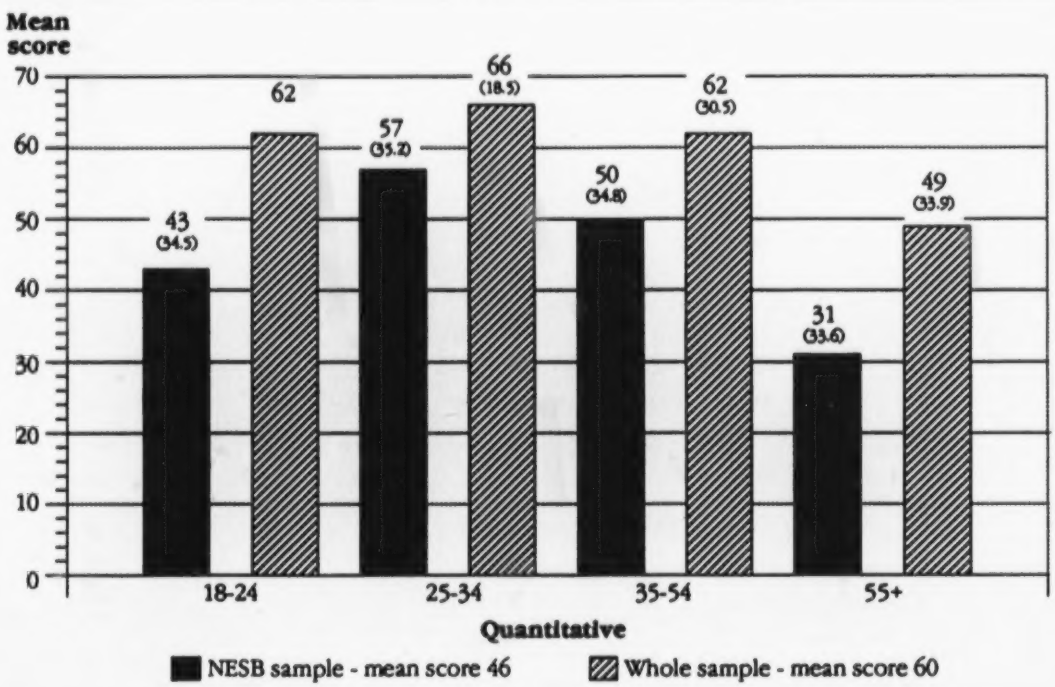
Performance in each age category is lower than it is for ESB of similar age. However it is much lower on the quantitative literacy dimension in each age group (seeFig. 5.5). The mean score for the fifty–five and over category is only half that of the sample as a whole. A worrying finding on this dimension is that the mean score for the 18–24 year olds is only 43 compared to 60 for the whole sample. Performance on the document dimension is about ten points lower in each age group and follows a similar pattern of decreased performance according to age. As with the quantitative dimension, performance on the prose dimension decreases significantly after the age of 55.

Data presented earlier suggests that age is not necessarily related to length of residence in Australia as similar proportions of migrants arrived at all ages. However there is likely to be an increasing number of older migrants with lengthy residence in Australia. Given this pattern of findings it is essential that the opportunity to develop literacy skills in English is not withdrawn from older migrants.

Seventy–three per cent of the non-English speaking born sample have lived in Australia for more than 5 years and 56 per cent have lived here for more than 20 years. This clearly indicates an ongoing need for reading and writing classes for people who are non–English speaking born to ensure that they have the same opportunities as the English speaking born to benefit from changes to the structuring of Australia's workplaces.

The data provides no evidence to suggest that recent immigrants are in greater need of literacy assistance than those who have been resident for some years. The pattern of scores across the three dimensions is not consistent and shows some curious anomalies, such as the scores of the group who have been resident for between eleven and fifteen years. However all scores are below the whole sample means particularly on the prose and quantitative dimensions. This must raise serious questions about the extent to which many long–term migrants are able to participate effectively in Australian society.

FIGURE 5.5 Average score on the quantitative literacy dimension by age by NESB.



SUMMARY OF FINDINGS OF CHAPTER 5

1 Nine per cent of non-English speaking born people who attempted to circle the expiry date on a driver's licence were unable to do so, compared with 3 per cent of the English speaking born sample.

2 Twenty–nine per cent of non-English speaking born people who attempted to locate 'gross pay to date' on a pay slip failed to do so compared with 15 per cent of the English speaking born sample.

3 Forty per cent of non-English speaking born who attempted to calculate the change from $5.00 after buying two specified items from a lunch menu were unable to do so compared to 29 per cent of the English speaking born sample.

4 The difference between the mean score of the whole sample and the sample excluding non-English speaking born was 1 point on each of the three literacy dimensions.

5 However the mean scores of the non-English speaking born sample are lower than the mean scores for the English speaking on each literacy dimension; 11 points lower on document, 12 points lower on prose and 15 points lower on quantitative.

6 The mean score on the document dimension for those from a home where English was not the main language spoken but who started to learn to read English before the age of five is 6 points higher than the mean score of the English speaking born sample.

7 Literacy performance drops with age, although the mean score of the non-English speaking born youth (18 – 24) on the quantitative dimension was 20 points lower than the score for that age group in the sample as a whole.

8 Forty–nine per cent of non-English speaking born adults state they seek assistance with reading official documents; 17 per cent with filling out a Medicare claim form.

9 Twenty–four per cent of the non-English speaking born had attended migrant English classes.

10 Seventy–three per cent of the non-English speaking born sample had lived in Australia for more than 5 years, 56 per cent had lived in Australia for more than 20 years. There is no evidence to suggest that literacy in English improves with length of residence in Australia.

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[1] Kalantzis, M., Gurney, R. and Cope, B. 1986 p.21

[2] See section entitled 'The State of Adult Literacy in English in Australia'.

6. Workplace Implications

'We will be looking for greater capacities in problem solving, innovation, inventiveness and imagination.'

Laurie Carmichael [1] Assistant Secretary ACTU

'It may be in the short-run economic interest of firms to train their employees only for specific, existing jobs but in the long run, the educational activities of business must be geared toward more general critical reading skills.'.

R.Venesky, C.F.Kaestle & M.M.Sum[2]

A SUCCESSFUL ECONOMY NEEDS THE SOLID BASE of a literate and numerate workforce to be able to respond quickly and confidently to increasingly changing workplace demands. The restructuring of the Australian workplace and of the awards determining the pay and conditions of workers is about creating a flexible workforce. It is about enabling workers to carry out a wider range of tasks and take on more responsibility for more pay. It is about re–training. To re–train, workers will need to be confident about their literacy and numeracy skills. Employers and unions alike recognise this.

Previous studies of literacy have established a number of findings relevant to this issue. There is a low correlation between literacy scores on traditional standardised tests and the ability to cope with the literacy demands of work and a low correlation between scores on tests and supervisor's ratings of literacy skills.[3] To some extent this may be explained by the fact that people with literacy problems develop strategies to compensate for their difficulties and often manage to hide them altogether. The main reason, however, is that different jobs in different companies and different locations require different profiles of literacy and/or numeracy skill. Specific jobs require specific skills which are not measured by vertical, hierarchical, standardised tests.

Although the findings of this and other similar surveys indicate the importance of level of education for literacy ability in adult life, there are studies which suggest that schooling may develop a set of skills unlike those needed in employment. The literacy skills needed outside school are less structured. They involve a greater variety of materials and settings and are often used to accomplish practical tasks. 'Reading to do' is different to 'reading to learn'. It is known that workers' literacy skills improve faster if the literacy training is integrated with their job training.[4] These are areas of research which need urgent attention if the literacy and numeracy needs of working adults are to be effectively met in workplace and other training programs. Without knowing what the literacy and numeracy demands of different occupations are it is difficult to provide the relevant training. Once this is known, literacy tuition can be integrated with vocational training on the job.

Studies have shown that workers consistently under–estimate the amount of reading and writing they do while they are at work.[5] Other work has shown that job–related reading comprises a significant proportion of the reading that adults perform.[6] This study sought to find out what significance people attach to their literacy. Do people do much reading and writing in their lives? Do people think that literacy is important for their work? Are people prepared to do anything to improve their literacy problems? Do they perceive that their literacy and numeracy skills are preventing them from getting ahead?

All those who were working or who had ever worked were asked whether they thought that their reading and writing skills had prevented them from getting ahead. Seven per cent of this group said their reading skills had and 8 per cent felt the same about their writing. Of the 5 per cent of the sample who were unemployed, 9 per cent of these felt their reading skills had prevented them from finding a job and 13 per cent blamed their writing skills.

When those who worked or who had worked were asked whether they would ever do anything to improve their reading and writing skills, only 1 per cent said they would. A further 7 per cent said they might. Of this group, 80 per cent were currently working and 60 per cent were ESB. If the 7 per cent who admit that their literacy problems may have held them back is the same 7 per cent who might one day do something about it, this is an encouraging finding. Other studies show that a very small number of those admitting to reading and writing difficulties actually do anything about it.[7] Perhaps the findings about how many had sought help is a more accurate indicator. Four per cent of the sample had attended adult literacy classes. Twenty–four per cent of the NESB had attended migrant English classes.

HOW MUCH READING AND WRITING DO ADULTS DO?

Ninety–eight per cent of the sample said they read newspapers, 90 per cent read junk mail or catalogues. When asked what kinds of books they had used, 68 per cent said novels, 63 per cent said reference books, 58 per cent said cook books and 61 per cent said manuals. Eleven per cent said they had not referred to any books in the past 6 months.

When asked about writing, 76 per cent said they had written a personal letter in the last six months, 45 per cent had written a business letter and 20 per cent had written a technical report. The reading and writing of lists was the most common literacy activity.

Given the range of abilities on the three literacy dimensions measured, these are disturbing findings. It appears that a significant proportion of the sample either do not make much use of their literacy skills or simply do not possess them. This has implications for the workplace as findings running through most studies on literacy in the workplace have established that not only is literacy called for in most jobs, but that training for a job is usually more demanding of literacy than is performing the job.

A recent Australian study[8] found that 96.5 per cent of employers and 98.7 per cent of unions surveyed agreed with the proposition that worker literacy and numeracy skills would be of increasing importance in the future. The same study also found that nearly half the employers and more than a third of the unions consulted were aware of employees from both English speaking and non–English speaking backgrounds with literacy problems.

This study asked whether respondents felt that reading and writing skills were needed for their work. They were asked how important reading and writing is for their jobs. Thirty per cent did not think that writing was important and 23 per cent did not think that reading was important in their jobs. This finding poses a significant challenge. If reading and writing are not important for the jobs of 30 per cent of the workforce what incentive is there to improve those skills?

The results of those who feel that reading is not important for their jobs score significantly lower than the mean on each dimension of literacy; 11 points on document and prose and 17 points lower on quantitative.

LITERACY AND LEVEL OF OCCUPATION

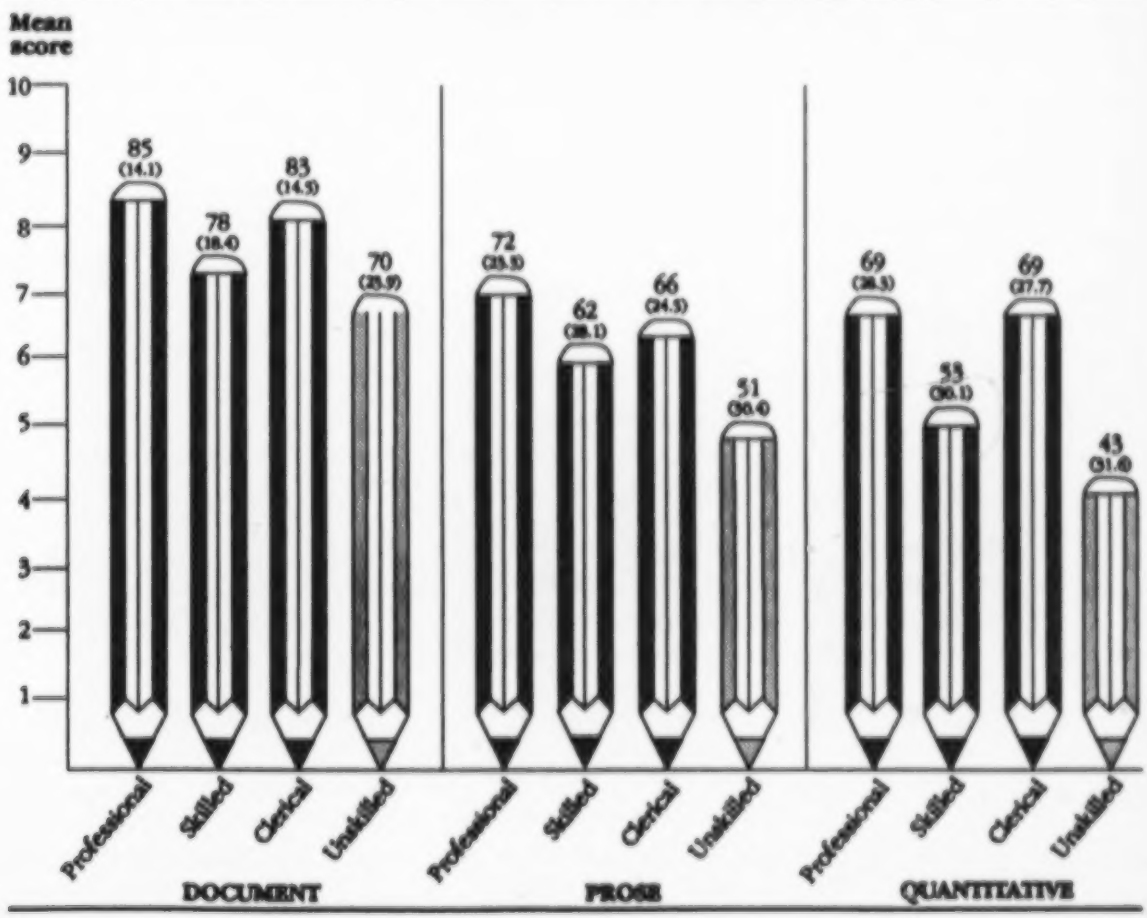
Much has been written about the relationship between low levels of literacy and low socio-economic status. Data was collected to discover whether there was any consistent relationship between highest parental occupation and literacy and between the respondent's own level of occupation and literacy performance. Occupa-

tions were classified as professional, skilled, clerical and unskilled. The parent with the highest level of occupation was selected as the basis for classification. On the three dimensions of literacy, the highest scoring respondents were those whose parents' highest level of occupation was classified as professional or clerical. On all three dimensions the mean score was higher than the mean score for the sample as a whole. Respondents whose parents were classified as unskilled scored approximately six points below the sample mean on all three dimensions. For example, the mean score for this category of respondents on the qualitative dimension was 53.

All respondents who were working or who had retired from employment were asked about their most recent job. Respondents whose own occupation was classified as unskilled performed less well on each of the three dimensions. The mean score for respondents who were classified as unskilled was 43 on the quantitative scale. On the document scale the mean score was 70, which is ten points lower than the mean score for the whole sample. As with highest parental occupation a similar pattern emerged of above average scores for respondents whose own occupation was classified as professional or clerical. This supports other work which reports that people in unskilled occupations have lower levels of literacy and numeracy skills. The better performance of clerical workers may reflect their greater use of literacy skills at work.

The scores for those who were unemployed at the time of the survey were slightly higher than those who were working or had worked in unskilled jobs, 73 document, 55 prose and 51 quantitative compared to 70, 51 and 43 respectively.

FIGURE: 6.1 Literacy performance on three dimensions by level of occupation



A factor which may have implications for workplace training programs is whether there is any difference in the literacy abilities of people living in metropolitan environments and those not. Sixty–nine per cent of the sample live in metropolitan environments. The Figure 6.1 shows the differences in performance between the two groups. The differences, though small, do exist particularly on the quantitative dimension.

SUMMARY OF FINDINGS OF CHAPTER 6

1 Seven per cent of people in employment or retired from employment stated that their reading skills had held them back. Eight per cent felt the same about their writing skills.

2 One per cent of this 8 per cent said they would seek help with their literacy skills, 7 per cent said they might.

3 Sixty per cent of this 8 per cent were ESB, 80 per cent were currently working.

4 Nine per cent of those unemployed at the time of the survey felt their writing skills had hindered their chances of finding a job. Thirteen per cent felt the same about their writing skills.

5 Four per cent of the whole sample had attended adult literacy classes. Twenty–four per cent of the NESB sample had attended migrant English classes.

6 Twenty–three per cent of the sample did not think reading was important for performing their job. Thirty per cent did not think that writing was important for performing their job.

7 Those who did not think that reading was important for their jobs scored 11 points lower on the document and prose and 17 points lower on the quantitative dimension, than the sample as a whole.

8 Literacy proficiency is highest among respondents whose parents were classified as professional or clerical or who are themselves classified as professional or clerical.

9 The mean scores for the unemployed sample were slightly higher than the scores of those in unskilled occupations.

10 Those in unskilled occupations scored 15 points lower than the professional group on the document dimension, 21 points lower on the prose dimension and 26 points lower on the quantitative dimension.

11 Those living in non–metropolitan areas scored 6 points lower than those living in metropolitan areas on the quantitative dimension and 4 points lower on the prose dimension.

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[1] Carmichael, L. in Cumming, J. (Ed), 1988
[2] Venesky, R., Kaestle, C.F. and Sum, A.M. 1987
[3] Mikulecky, L. & Ehlinger, T. 1986
[4] Sticht, T. 1975
[5] Mickulecky, L. 1982
[6] Sharon, A.T. 1973-74
[7] NCDS. UK. 1987
[8] Long, P. 1989

7. Literacy Practices and Attitudes

'Soap writers get things right. When did you ever see a soap character reading a book, or lending a book, or stealing a book. When did you see a set with a shelf of books. Only when the character is a professional.'

Harry Robinson[1]

THIS SURVEY OFFERED A RARE OPPORTUNITY TO collect information about the position that literacy holds in an individual's past and current life and about how people understand the causes of their literacy problems. Some writers suggest that one reason why adults fail to achieve the levels of literacy that society desires is that they may not come from a home background which values literacy. They may rightly feel alienated by the literate culture, or by the kinds of literacy materials they were presented with in school.

There is a growing body of evidence that a lack of literacy materials in a child's home, is likely to result in literacy and numeracy problems, particularly if associated with an indifferent attitude to the value of education.[2] Children from home backgrounds like this are unlikely to read or write much themselves as adults, which suggests that there may be an inter-generational dimension to the problems of low levels of literacy among adults.

In an attempt to begin to shed some light on this phenomenon, questions were asked about people's memories of their childhood in relation to schooling in general and reading and writing in particular. They were asked to think carefully about these questions and were given no pre-coded categories. People's definitions of these childhood experiences were as interesting as the experiences themselves. For example, if a person said that they had a reading problem because they were dyslexic, they were asked if they knew why they were dyslexic. The interviewers were instructed to record verbatim and all responses were coded centrally.

Among other things, respondents were asked:

- Was there anything that kept you away from school more than other children. If so what?
- Was there anything that stopped you from writing well? If so,what?
- Was there anything that stopped you from reading well? If so, what?
- Was there anything that affected your schooling in some other way? If so, what?
- How many schools did you go to?
- How often were you read to while you were growing up?
- How good was school for preparing you for the kind of reading and writing tasks you need to do now?
- Did you have various kinds of books and other reading materials in your home while you were growing up?

NUMBER OF SCHOOLS ATTENDED

Adults in adult literacy programs often have a history of disrupted schooling. In this survey however, the data revealed an opposite tendency to the one that was expected. Those who attended more than six schools (3 per cent) scored slightly higher than those who attended between one and three schools (82 per cent). Those who attended between four and six schools (15 per cent) scored between five and six points higher on the three literacy dimensions. This suggests that it is more likely to be the reasons behind the disruption of a person's schooling

that contribute to literacy problems than the schooling itself.

FACTORS AFFECTING SCHOOLING AND LITERACY PERFORMANCE

The four questions about school experiences were put together to form one variable; childhood difficulty. Twenty–three per cent of the sample responded positively to one or more of the four relevant questions. Preliminary analysis of the responses begins to shed some light on the significance of these experiences on later literacy performance. The following table summarises the responses given into a number of categories.

TABLE 7.1 Percentage of people who stated these factors affected their schooling and literacy performance.

Reasons Stated for Difficulties	%
Health problems	31
Parents' health	5
Socio-economic problems	20
Hearing	3
Absence from school	17
Parental attitudes	3
Attitude toward school	11
Intellectual disability	2
Physical disability	9
English problems	2
Sight	8
Didn't go to school	1
Bad opinion of teachers	6
Learning disability	5

The differences are quite small between the mean scores for the whole population on the three literacy dimensions and the mean scores for those who state they had problems with the quantitative dimension.

However, there are much greater variations within the categories of reasons stated for school difficulties, particularly on the quantitative literacy dimension. As the numbers of people within each of these categories are very small, the findings reported here should be treated as indications about where future research could be directed. Table 7.2 shows by how much and in which direction, the scores of different categories of respondents varied from the mean scores of the sample as a whole. Note how those who state they had problems with English while they were at school score higher on each dimension as do those who reported problems with their eyesight. This suggests that these are background characteristics that an individual may have some degree of control over changing. Such an explanation may not apply to the finding that people who experienced problems with their parents' attitudes or behaviour scored higher than the mean.

Characteristics associated with the lowest scores such as intellectual disability, learning disability, hearing or speech problems and the impact of parents having poor health are factors over which the individual has little control. It is also arguable how much control a child has over his or her attitude toward school at the time the attitude is affecting the schooling. How far is this, for instance, a function of socio–economic and cultural factors in the child's background?

ACCESS TO LITERACY MATERIALS IN THE HOME

Consistent with the U.S. study a 'childhood literacy support materials' variable was developed by adding the number of 'yes' responses to the frequency that various types of reading materials were present in the home while growing up. This included materials in any language.

The materials were:

- daily or weekly newspapers
- children's books
- magazines
- comics
- library books
- more than 25 other books
- reference books
- dictionaries.

TABLE 7.2 Difference between mean scores of whole sample on three dimensions of literacy and mean scores of those expressing childhood difficulties.

Reason given	Literacy dimensions		
	Document	Prose	Quantitative
Health problems	- 2	- 3	- 7
Sight	+ 3	+ 4	+13
Hearing/speech	- 7	-19	- 23
Attitude toward school	- 8	-11	- 10
Absence from school	- 1	+ 6	- 8
Physical disability	- 2	- 2	- 6
Learning disability	-12	-16	- 21
Intellectual disability	-31	-53	- 55
Parents' health	-10	-10	- 28
English problems	+ 5	+ 4	+ 6
Socio-economic problems	- 4	- 3	- 13
Bad opinion of teachers at school	- 2	0	- 6
Parental attitude/behaviour	+ 3	+ 4	- 6

Respondents were asked whether these materials were present in the home while they were growing up all of the time, most of the time, some of the time or not at all. The items that were most likely to be present all of the time were newspapers (72 per cent) and a dictionary (86 per cent). Only 36 per cent of respondents remembered library books in the childhood home all of the time and 45 per cent remembered reference books all of the time. Seventy–one per cent could recall having children's books in the home all of the time compared to 10 per cent who had no children's books in the home. Thirty per cent said there were no reference books in the home, 21 per cent said there were no library books and 5 per cent said there were no newspapers.

The regression analysis found that the presence of reading materials in the childhood home (childhood literacy support materials) was a significant variable in explaining variations in literacy performance. Figure 7.1 (next page) shows the relationship between the number of reading materials in the childhood home and performance on two of the three literacy dimensions. Figure 7.2 indicates the relationship between occupation, literacy levels and childhood support materials.

The results from the question asking whether the respondent could remember being read to as a child yielded very little useful information. It is possible that the fact that 10% of the sample were unable to remember affected the result.

PERCEPTION OF SCHOOL PREPARATION FOR ADULT READING AND WRITING TASKS

About three quarters of the sample stated they were very satisfied with the preparation that their school gave them for the reading and writing tasks they need to undertake as an adult.

Those who feel school did not serve them well did less well on the literacy tasks by 5 points on the document dimension, 2 points on the prose dimension and 10 points on the quantitative dimension. However, these results should not be taken at face value as both the poor opinion of school and the poorer performance on the literacy tasks may be explained by other socio-economic factors such as the schooling was not in English, or by the feeling that there was not a supportive attitude at home. Poor experiences at school seem to be more associated with poor performance on the quantitative scale.

FIGURE 7.1 Number of literacy support materials in the house.

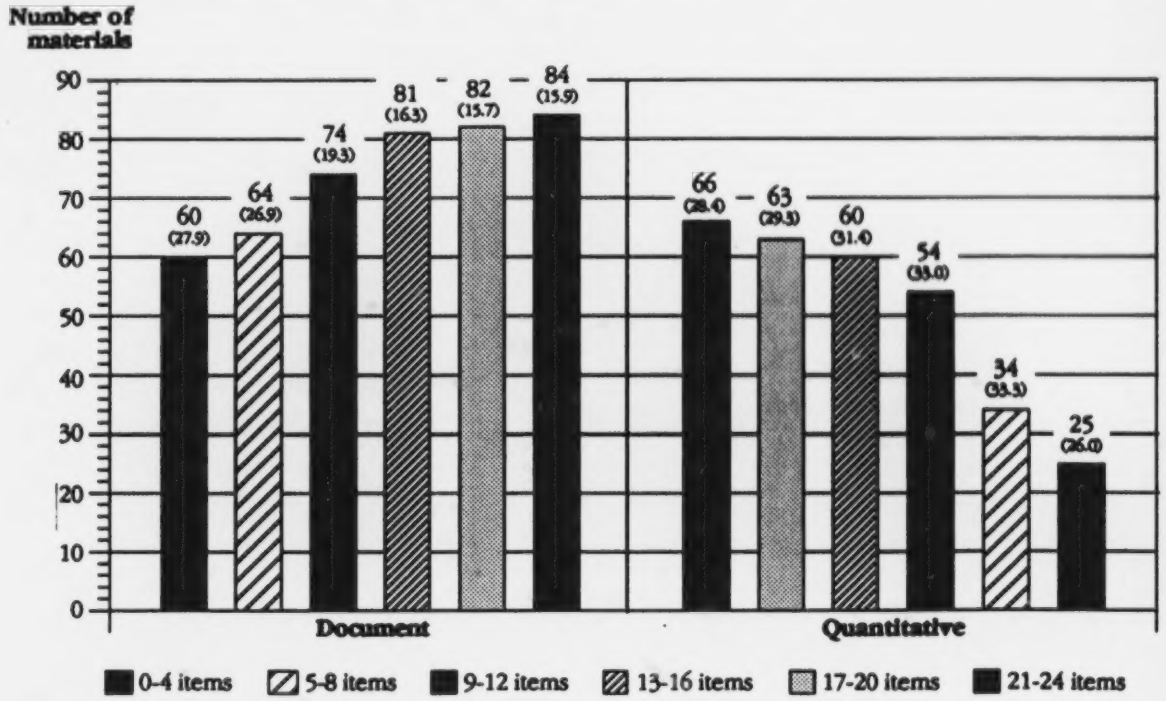
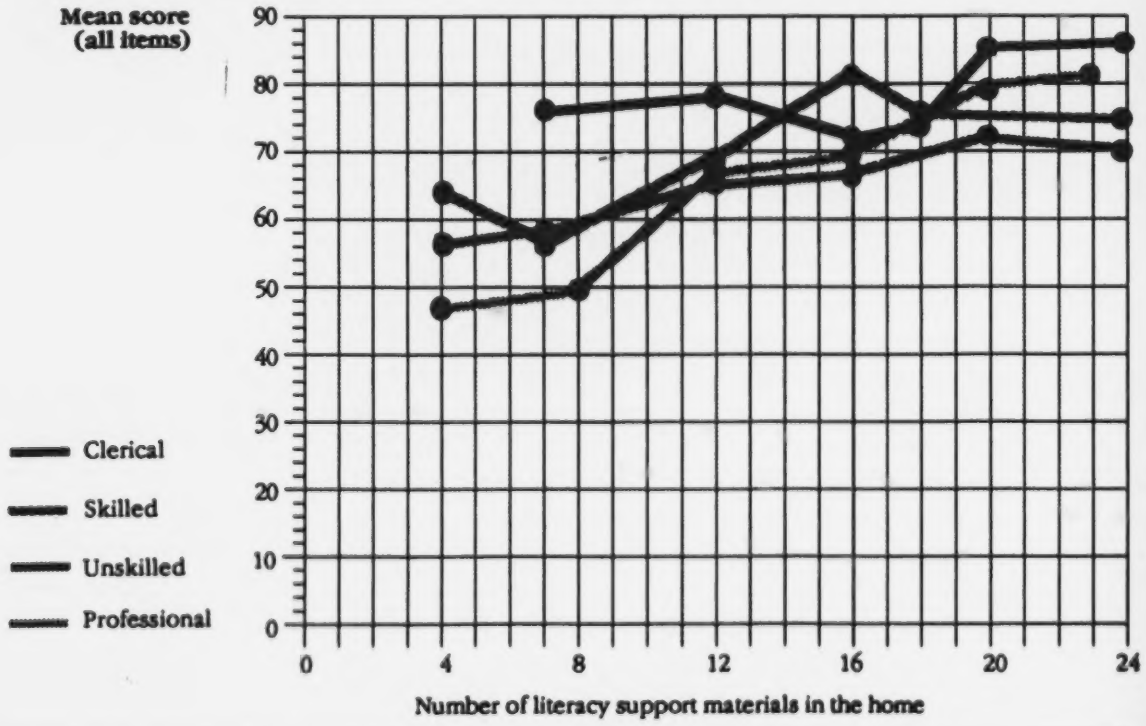


FIGURE 7.2 Childhood literacy materials in the home by highest parental occupation by mean score over all literacy items.

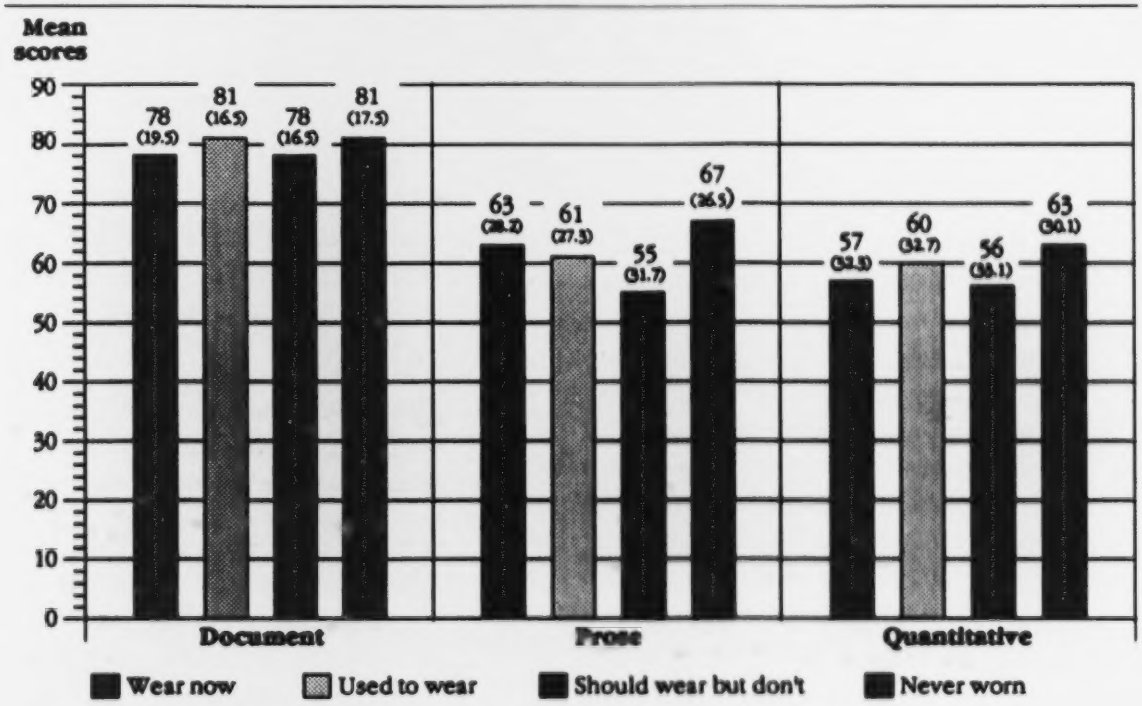


LITERACY PRACTICES AS ADULTS

An important aspect of this survey was to gather information about the current literacy activities of adults in Australia and to explore what kinds of attitudes people have to literacy activities and whether this is related to their performance.

As with the data collected about children, it was important to establish whether the reasons for reported literacy difficulties were to do with reasons of physical or intellectual disability. Respondents were asked a number of questions about spectacles and also whether they had any other health or disability problems now which they felt affected their ability to read and write. Six per cent said they did. The specific questions about spectacles were included partly to alert the interviewer to remind the respondent that they would need their glasses and partly to avoid assigning the reason for literacy problems to other factors when it may simply be a matter of failing eyesight. Of the 6 per cent reporting problems, 46 per cent attributed this to eyesight, 32 per cent to physical disabilities (often due to industrial injuries), 19 per cent to long-term illnesses, 14 per cent to intellectual disabilities and 4 per cent to hearing or speech problems. Some mentioned more than one reason. Figure 7.3 shows how performance on the three dimensions of literacy varied according to different behaviours in relation to spectacles. People who have never worn spectacles score slightly higher than the average on all three dimensions. People who should wear glasses but don't, score somewhat lower than the average. However, the range of scores indicates that eyesight is not sufficient as an explanation for literacy difficulties. When performance on particular items is considered there is no consistent pattern of results. For example, only 68 per cent of those who should wear glasses got a single feature match in a newspaper article correct compared to 93 per cent of the population as a whole; however, 54 per cent got the more complex three feature match item correct compared with 55 per cent of the whole sample. Similarly 54 per cent of this group got one of the Yellow Pages items correct compared with 75 per cent of the population, but 100 per cent of this group were correct on the

FIGURE 7.3 Mean score on literacy dimension by spectacles.



other Yellow Pages compared with 92 per cent of the population. This is an important finding given that literacy performance appears to diminish with age after age 35.

Respondents who had expressed some concern about their literacy and numeracy skills were asked whether they would do anything about it. One per cent were currently enrolled in adult literacy classes, 7 per cent said they might someday get help. When asked where they would prefer to learn, pretty well equal numbers preferred a TAFE College or Night School. This may reflect differences between the ways the States organise literacy provision.

CURRENT LITERACY PRACTICES

It would be wrong to draw conclusions about literacy practices in other aspects of people's lives from their attitudes to the importance of reading and writing in their jobs. Information was collected about what Australian adults read. These data present a picture of the range and types of materials read and present an opportunity to see what relationship there is between current literacy practice and literacy performance.

Information was collected about:

- content areas read in newspapers
- types of books read in the past six months
- types of documents read in the past six months
- types of documents written in the past six months.

A summary of the findings to these questions are presented in the chapter on Workplace Implications. The important point to make here is that the variable of current literacy practice was the best predictor of performance on all literacy dimensions according to the regression analysis. The number and types of documents read in the last six months was the best predictor. At first sight, this seems little more than a truism implying that people who read score best on literacy tests. However it is a finding of significance and suggests that regular use of literacy skills may be an important ingredient of continued literacy ability as an adult.

Finally, information was collected about what kinds of reading and writing activities people asked for assistance with. This was seen as an indication only of the accessibility of formal documents and was collected with the intention of feeding back this information to the relevant departments. These findings are presented in the section about people from non–English speaking backgrounds.

SUMMARY OF FINDINGS OF CHAPTER 7

1 Twenty–three per cent of the sample stated that their schooling had been adversely affected in some way.

2 Thirty–one per cent of these cited health problems, 20 per cent cited socio–economic problems, 5 per cent cited learning disabilities.

3 Adults who stated that eyesight difficulties adversely affected their schooling performed better than average on all three dimensions of literacy.

4 Adults who stated that problems with English adversely affected their schooling performed slightly better than average on all three dimensions of literacy.

5 As might be expected low levels of literacy performance by adults are linked to intellectual disability and learning disability as a child. Childhood hearing and speech problems also seemed significant.

6 Socio–economic problems as a child correlate with poor performance on all dimensions of literacy but particularly on the quantitative dimension.

7 Health appears to be a significant factor affecting literacy development. Respondents citing their parent's poor health and/or their own poor health as adversely affecting their schooling

performed less well than the average on all literacy dimensions. Again this was particularly apparent with the quantitative items.

8 The quantity of reading materials in the childhood home is a good predictor of literacy performance as an adult.

9 Ten per cent of the sample could not recall having any children's books in their childhood home; 30 per cent could not recall any reference books.

10 Adults attributed their literacy difficulties as adults to poor eyesight, physical and intellectual disabilities and long-term illness, sometimes caused by industrial accidents.

11 Current literacy practice is the best predictor of current literacy performance on all three dimensions. Current practice with 'documents' is most likely to be related to high levels of literacy performance.

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[1] TV Extra. *Sydney Morning Herald.* 15.7.1989

[2] eg. Lankshear, C. & Lawler, M., 1987

8. Conclusions

'The relatively strong and uniform associations between literacy proficiencies and labour market success among young adults indicate that literacy gaps will be a major factor in determining disparities in employment and incomes in the American economy in the future.' [1]

R. Venesky, C.F. Kaestle and A.M. Sum

The Australian Council for Adult Literacy defines adult literacy as follows:

> *'Literacy involves the integration of listening, speaking, reading, writing and critical thinking; it incorporates numeracy. It includes the cultural knowledge which enables a speaker, writer or reader to recognise and use language appropriate to different social situations. For an advanced technological society such as Australia, the goal is an active literacy which allows people to use language to enhance their capacity to think, create and question, in order to participate effectively in society.'* [2]

The definition developed by the NAEP Young Adult Survey and adopted for this study is consistent with that definition. 'Using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential.'

The results of this survey suggest that assessing literacy abilities across a number of dimensions is a valid approach to explore, but the choice of items in future assessments must reflect the purpose of the assessment. The validity of the approach does not lie with the particular items selected for this survey, rather it lies in the conceptualisation behind the development of the items. Whole banks of items could be developed so that it becomes possible to select culturally relevant items to identify not only what people can't do but also what they can do or need to do for specific purposes and contexts. The potential value of this approach needs to be further explored.

Becoming and remaining literate in one's society is a life–long pursuit affected by such factors as home environment, economic situation, educational opportunities and personal aspirations. For some the pursuit will be much harder than others and the goal of literacy may appear to be always around the next corner. Short 'fixes' tacked on to vocational training programs will do little to assist those with these difficulties. Inappropriate learning opportunities may in fact have the reverse effect by increasing the opportunity for failure and further reducing self–confidence.

Some writers have argued[3] that concepts of minimum rates of literacy in society are socially constructed which means that as society's literacy demands increase, this ensures that there will always be a pool left with relatively severe literacy and numeracy difficulties. Kozol argues that 'it is the rate of change and the degree to which it may outpace the literacy level of the nation, that determines what part of the nation is unable to survive'.

Is this a situation to accept or to attempt to change? Is this consistent with the goal of literacy as a right for all? Should we accept that there may always be a significant minority of adults who are unable to perform literacy tasks at anything but the basic level of signing their name or locating a street on a map? Although many of these people are more likely to be older, unwell, unskilled and

from non-English speaking backgrounds, many are not. We now know that literacy and numeracy problems are not largely concentrated in particular groups but are spread across all groups in the population. Is this the right scenario for Australia moving into the technologically advanced age? Does this sit comfortably with the reduction of resources available to the education system, particularly in the provision of adult literacy programs?

Care should be taken not to assume that a disproportionate number of adults with literacy problems are from non–English speaking backgrounds. Low levels of schooling, low levels of skill, low levels of health and other indicators of poverty are also indicators of low levels of literacy among all adult Australians. Excluding the non–English speaking born from the survey had little impact on the average scores.

What is apparent is that the answer to solving Australia's adult literacy problems is not easy. It is not enough to argue that the schools should be doing a better job. The results suggest that schools may well be doing better already. If funds are to be targetted to make the most effective use of scarce resources, then to which schools, where and with what students? Obviously the answer will vary according to what the priorities are and this is often a political issue. Ideas about minimum standards are relative. Ideas about progress and achievement are relative. The issue of appropriate curricula is relative.

Should schools be concentrating their resources on training children to be able to perform 'functional' literacy tasks as adults or should they be in the business of providing a broad general education? If the response to society's concerns about levels of literacy is to concentrate on the mechanics of literacy without concern for the content of our reading matter then the risk of increasing the divisions in society grows.

Attention should also be focussed on the relationship between numeracy and literacy. We need to know how the numeracy problems that adults experience are linked to difficulties with reading and writing.

But these are not problems that only our schools can help to solve. More than 20 per cent of Australia's adults do not receive their schooling in Australia. Also, the population is ageing. According to one source[4] 70 per cent of the workforce of the year 2000 have already left school. More adults need help to improve their literacy skills than we thought, and not just at the Rudimentary and Basic levels.

'If democracy isn't to concede decisions on such issues as nuclear disarmament or the greenhouse effect to the experts and the politicians, we need citizens who have critical reading skills.'[6]

One of the most disturbing results of this survey was that it revealed that approximately 70 per cent of the sample were unable to get at the ideas behind what they were reading. Effective participation in a democracy depends on the ability of the population to think critically, to understand the issues they are being asked to vote about. We must not assume that critical reading and thinking skills be reserved for children in advanced classes. 'Although it is inevitable that there will always be a range of skills among the general population, the schools should be fighting stratification, not reinforcing it.'[5] This is clear evidence of the need for the integration of literacy skills across the curriculum.

These findings also reinforce the view that remedial education must be interpreted much more broadly than extra help with the technical skills of reading and writing. Adults, and presumably adolescents, with literacy difficulties have fewer opportunities to know how their world works. Literacy should incorporate knowing how to read the world.

The results also support the argument that there is an inter–generational aspect to society's literacy problems. A co–ordinated campaign which enlists the support of families and communities is needed to help raise the understanding of the significance of reading not only during childhood years but life–long.

Finally there is a need to acknowledge that poorly designed official documents, such as forms, cause problems for many adults. Many of

these people are likely to have had lower levels of education, be older, have less skilled jobs, be less proficient in English and suffer greater health problems. They are thus more likely to have a greater reliance on access to public forms of assistance. All steps must be taken to ensure that Australian adults are not deprived of their rights because of carelessly designed official documents.

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[1] Doenaus. op. cit. p.39
[2] ACAL Policy Statement
[3] eg. Lankshear, C. & Lawler, M.
[4] Venesky, R., Kaestle, C.F. and Sum, A. M. 1987
[5] op. cit.
[6] ACAL: *Literacy: Let's Get On With The Job.*

Appendix 1

The sample design and field work procedures were developed by AGB McNair. The sample design was a multi stage stratified area sample where the strata were defined as major urban, other urban and rural. Adults living in institutions were excluded. Potential respondents were screened out if the interviewer believed an interpreter would have been needed to conduct the interview. There were 114 of these. Where possible, the country of birth and year of arrival were recorded for these people. Analysis of this information yielded a wide range of both characteristics.

The final sample allocation was:

TABLE 9.1 Geographical distribution of sample.

Stratum	Area	Sample
Major urban	Sydney	336
	Melbourne	288
	Brisbane	162
	Adelaide	162
	Perth	162
	Hobart	54
	Canberra	36
	Other major urban	72
Large towns	North	36
	South	36
Small towns	North	36
	South	36
Rural	North	24
	Central	36
	South	24

Interviewers were instructed to obtain a total of 6 interviews from each area they were allocated and to achieve an average per area of one respondent of each gender in each of the age groups: 18–35, 35–54 and 55+. Four interviews were later rejected resulting in a total sample of 1496.

Selected characteristics of the sample percentages:

Gender	
Male	47
Female	53
Country of birth	
Australian born	77
Overseas born	23
Non-English Speaking Born	**14**
of which:	
from country with Roman script	10
Non-Roman script	4
Current employment	
Full-time work	40
Part-time work	10
Unemployed	5
Keeping house	25
Retired	15
Studying	4
Other	1

Age	
18 - 24	12
25 - 34	15
35 - 54	45
55+	28

Own occupation	
Professional	34
Skilled	24
Clerical	21
Unskilled	21

Highest parental occupation	
D.K. or N.A.	4
Professional	41
Skilled	26
Clerical	6
Unskilled	23

Appendix 2

TABLE 10.1 Comparison of percentages of people getting particular items correct from the whole sample with people getting items correct from those who attempted them.*

	Whole sample	Attempted sample
	percentage correct	percentage correct
Document items		
Bankcard - sign name	96	98
Licence - circle expiry date	89	96
Medicine label - instructions	52	54
Deposit slip - enter date	78	99
Map - locate intersection	88	96
Yellow Pages - find phone number	79	92
Deposit slip - cheque entry	73	96
Deposit slip - cash entry	73	86
Pay slip - gross pay to date	77	84
Yellow Pages - find heading	69	75
Paint chart - identify use	58	74
Charge account-write cheque	61	68
Job applic. form - past details	57	68
Paint chart - identify product	51	61
Prose (newspaper) items		
Swimmer - age	87	93
Swimmer - food	78	84
Technology - what Australia did	46	55
Technology - issues	27	32
Quantitative items		
Deposit slip - total	77	84
Menu - change	62	69
Record of financial transactions	55	63
Flight schedule - from Sydney	55	62
Flight schedule - from Brisbane	50	56
Menu - 10% surcharge	43	50

* See chapter 5 comparison of scores of NESB and ESB

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